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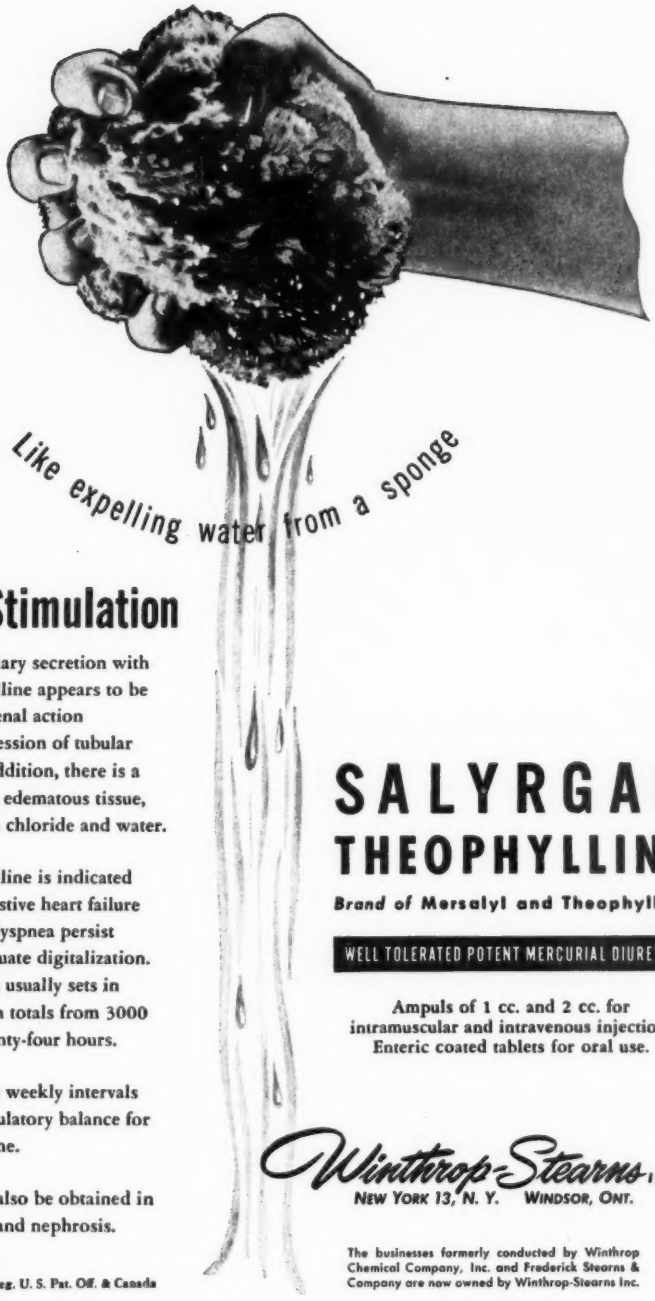


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# The Manitoba Medical Review

Vol. 28 FEBRUARY, 1948 No. 2

## CARDIOLOGY

Edited by J. M. McEachern, M.D.

### Case Reports Illustrating the Effects of Salt Restriction in Congestive Heart Failure

J. A. MacDonell, M.D.

In congestive heart failure the possibility has been suggested that, instead of failing circulation forcing fluid into the extra-cellular spaces, the mechanism is rather one of accumulation of extra-cellular fluid (oedema) resulting from a retention of sodium[1]. The premise is that the kidneys fail to dispose of sodium in the usual amounts. Just why this should occur constitutes a fascinating problem and one which has yet to be clarified. Perhaps the hormonal control of sodium metabolism in some way is disturbed; or it may be that there is a lesser blood flow through the kidneys in favor of other vital organs whose oxygen requirements are higher[2]. If there is an increase in the total sodium content of the body, as the cell membrane is impermeable to sodium ions, then an increase in extra-cellular fluid must ensue in order to maintain osmotic equilibrium between intra and extra cellular fluid. In this connection, it is interesting to note that, in respiratory infections which often precipitate episodes of congestive heart failure, there has been demonstrated a disturbance of sodium metabolism with a retention of that element[3].

If the edema of congestive heart failure be on this basis, the essential problem is not how to get rid of the excess water, but rather how to handle the troublesome sodium ions. Apparently this may be achieved by establishing a negative sodium balance. The existence of a critical level between the ratio of salt: water intake has been demonstrated below which, the amount of salt excreted exceeds the intake[4]. Thus the restriction of salt, particularly in the presence of a good fluid intake (3000 cc.), results in a ratio considerably below the critical level. Consequently, it is evident that the body's total sodium content will gradually diminish and there will be a concomitant decrease in oedema. The diuresis following the use of salyrgan is considered to be the result of increased sodium excretion. The use of substances which take up sodium as they pass through the bowel, has also been suggested[5].

In many obstinate cases, it is possible to dissipate oedema and prevent the re-accumulation of fluid by the proper restriction of salt in the diet always recognizing that such measure is merely an adjunct to the usual methods. The following cases are cited as being illustrative:

***Case 1**

Mrs. E. L., age 43.

An indefinite history suggestive of rheumatic fever in 1913 is given. In May, 1941, when admitted to hospital for investigation of dyspeptic complaints it was found that she was in early congestive heart failure with auricular fibrillation and an apical diastolic murmur. The diagnosis of rheumatic heart disease with auricular fibrillation and congestive failure was made. From that time until November, 1944, she took digitalis with varying regularity and in November, 1944, was admitted to hospital because of congestive heart failure. Between January, 1945, and April, 1947, she required hospitalization on four occasions and received a total of over 100 cc. of salyrgan. On April 27, 1947, she was given a restricted salt diet (with salt free bread and butter) and since then has continued to take digitalis but has required no further salyrgan. There has been some swelling of the ankles by evening, her dyspnoea is not as marked, she sleeps with two instead of her previous six or eight pillows, and she is able to carry out her ordinary household tasks in a leisurely fashion in comparison with prior very limited activity.

At present, the apex beat is in the anterior axillary line, there is a rough diastolic and blowing systolic murmur in the mitral area, and auricular fibrillation. The transverse diameter of the heart by X-ray is 19 cm.

***Case 2**

Mr. J. A., age 47.

He had two attacks of rheumatic fever as a child and was turned down by the Royal Navy during the First World War because of his heart. First symptoms began in 1941 when, after getting wet and chilled, he had haemoptysis. He was told at this time that he had an enlarged heart. Since then he has had increasing dyspnoea, two other episodes of haemoptysis and has been in hospital on four occasions for "congestive heart failure" with marked dyspnoea, an enlarged liver, pulmonary congestion but very little peripheral oedema. The diagnosis of rheumatic heart disease with auricular fibrillation and congestive failure was made.

From March, 1945, to May, 1947, he received a total of 50 cc. of salyrgan. In May, 1947, a "salt

free" diet was prescribed. Since, no further salyrgan has been given but there has been a considerable improvement in his dyspnoea and he is much more comfortable. At present, a blowing diastolic murmur is heard at the apex and there is auricular fibrillation. The transverse diameter of the heart is 17 cm. by X-ray.

**†Case 3**

Mr. A. M., age 49.

In November, 1946, following the last of four myocardial infarcts since Feb. 2, 1946, he developed leg oedema, ascites, a palpable liver, and signs of pulmonary congestion. These persisted in a marked degree despite the use of digitalis, diuretics (1 cc. of salyrgan twice a week), restricted fluids, and a routine "cardiac" diet. By the middle of May, 1947, no appreciable improvement had been achieved; he was completely bed-ridden. Accordingly, a "salt free" diet (with salt free bread and butter) was prescribed, fluids were permitted as desired, and 1 cc. of salyrgan was given weekly for several weeks. His urinary output improved and the oedema gradually diminished until, by the middle of June, 1947, most of his oedema had disappeared and the use of diuretics was discontinued. During the next month improvement continued and he was able to be up and around. His weight was now stabilized at about 126 pounds. Beginning July 29, 1947, 3 gms. of sodium chloride in divided doses were administered for ten days, with a weight gain of from ½ to 1½ pounds per day except the fifth. On the fifth and twelfth days after added salt was begun, 1 cc. of salyrgan was given with a loss of 3½ pounds on the fifth and a resumption of the starting weight level on the twelfth day. These occasions were the only ones from June, 1947, until the present on which salyrgan was given. He was discharged from hospital and, although his activity is limited, he has been living comfortably, has been following his diet, takes digitalis but has needed no further diuretics. He still has gallop rhythm and mild ankle oedema at the end of the day. The EKG shows bundle branch block.

**Discussion**

Case 1 tended to form oedema before the sodium content of her diet was controlled but this tendency was curbed by adequate salt restriction. Case 2 had little oedema but very troublesome dyspnoea which was markedly improved on a low salt diet. Case 3 had obstinate oedema not responsive to usual measures but which disappeared after the sodium chloride intake was limited. An increase in the salt content of his diet resulted in a gain in weight. These three patients received large total amounts of salyrgan together with the usual therapeutic measures, with essentially unsatisfactory results. There are certain dangers as well as definite inconveniences in the administration of salyrgan over long periods of time. How much simpler it is and how much more reasonable physiologically, merely to provide a diet low in sodium content to produce diuresis and control oedema. Ordinary baker's bread contains 100 mgm. to 150 mgm. of sodium chloride per slice and so salt free bread is an important step in achieving such a diet.

**Summary**

Water cannot be deposited in the tissues unless the sodium ion is already present, other factors being equal[2]. Indeed an increased fluid intake is conducive to a reduction of extra-cellular fluid[6, 7, 8].

If the sodium chloride intake is increased oedema tends to form[3].

Three cases have been presented illustrating certain features of these concepts.

1. Warren & Stead, Ann. Int. Med., 73:2, Feb., 1944.
2. Schroeder, Am. J. M. Sc., 204:52, July, 1942.
3. Progen, Am. Heart J., 23:555, April, 1942.
4. Gorham, Ann. Int. Med., 27:4, Oct., 1947.
5. Dock, Trans. Am. Assoc. Phys., 59:282, 1947.
6. Schroeder, Am. Heart J., 22:141, Aug., 1941.
7. Schemm, Ann. Int. Med., 17:952, Dec., 1942.
8. Schemm, Ann. Int. Med., 21:937, Dec., 1944.

* Cases 1 and 2 are from the records of the Heart Clinic at St. Boniface Hospital.

† Case 3 was a patient in Deer Lodge Hospital and is being followed in the O.P.D. at Deer Lodge Hospital.

## Heart Surgery

## Patent Ductus Arteriosus*

**M. B. Perrin, M.D., F.R.C.S. (Ed.), F.R.C.S. (C)**

In 1907 Munro[1] advocated the ligation of Patent Ductus Arteriosus. In May, 1938, Graybiel, Strieder and Boyer[2] reported an unsuccessful attempt to ligate the Ductus in a patient with subacute bacterial endocarditis. In August, 1938, Gross and Hubbard[3] performed the first successful ligation. Since then the operation has become standardized and is now a recognized procedure, and performed with a very low mortality.

The incidence of patent or persistent Ductus Arteriosus can best be judged from Maude Abbott's[4] classical studies on Congenital Heart Disease—(1937)—out of 1,000 autopsy specimens investigated, patency, unassociated with any other heart defect was observed in 92 instances. A further 150 cases were associated with some other cardiac abnormality.

It must be remembered that a patent ductus may play a compensatory role—for example, co arctation of aorta or extreme aortic stenosis, and in cases in which the right ventricle and pulmonary artery have a defective communication, circulatory efficiency is only obtained by passage of blood through the ductus or through a patent interventricular septum.

Surgery can only be concerned with those cases of patency in which the occlusion would not bring about any detriment to the circulatory system.

* Department of Surgery, Winnipeg Clinic, Winnipeg, Man.

### Indications for Surgery

A persistent patent Ductus Arteriosus is an arteriovenous fistula, and the blood flow is from the high to the low pressure, i.e., from aorta to pulmonary artery. This constant flow results in enlargement of the pulmonary conus, to engorgement of the vessels in the lung, and finally to heart embarrassment. This is not the only thing to be feared, for we recognize that at any time infection with the strep. viridans may occur, vegetations form on the pulmonary end of the ductus and in the pulmonary artery itself. Then emboli may occur from pieces of vegetation becoming broken off and lodging in the lungs.

Abolition of the flow of blood from aorta to pulmonary artery by ligature or section of the Patent Duct is able to alleviate the symptoms of lung and heart embarrassment, and also to cure the condition of subacute Bacterial endocarditis. It is well known that cases of Persistent Ductus can survive into middle or old age without much inconvenience but the average expectation of life is 20-25 years. Where the ductus persists into adult life there is considerable enlargement of both ventricles and calcification of the actual fistula is common. This latter condition may be contributory to an aneurysmal condition of the Ductus Arteriosus. Evarts Graham—(1943)—reports 3 cases. Out of a collected total of 29 cases, 24 were found to have occurred in children, so it is possible that some inherent weakness may be present.

An important question to decide, is, whether it is justifiable to advocate surgery in a symptomless case. The reasons for surgery are largely prophylactic in this group. Against this must be balanced the operative risk. Today this is very small. However, the time is too short to evaluate the final result on these cases, but from the published reports, one gains the impression that the children have developed better than if they had no surgery.

### Operation

**Anaesthetic**—Cyclopropane or ether has been our choice. Intratracheal tube is used to control respiration because we operate with an open chest, and a collapsed lung.

The incision is usually along the 2nd or 3rd interspace, or in the case of a female, an incision below the breast is used and the chest entered through the 2nd or 3rd interspace. The incision extends from the side of the sternum to the axilla. It is deepened through the pectoralis major and minor muscles, down to the intercostal muscles between the ribs. The pleura is incised and the pleural cavity entered. The internal mammary artery can be secured if necessary and tied; following this, the costal cartilage of 2 and 3 can be cut by means of a knife and this will allow a rib spreader to be inserted and the wound widened. The lung collapses and is pushed away from the pericardium. The arch of the aorta and pulmonary artery can be seen and felt, and the maximum point of thrill will be felt at the pulmonary end of the duct. The Phrenic Nerve is identified running along the side of the Pericardium—about 1cm. behind this nerve, the Mediastinal Pleura is picked up and incised up and down. By clearing the lower leaf of mediastinum down, one can see the left pulmonary artery passing to the left lung and thus one can orientate the structures clearly. It has been reported that a pulmonary artery has been ligated in mistake for the Patent Ductus. One next opens and clears the space and thus finds and clears the vagus nerve with its recurrent branch. This recurrent vagal nerve hugs the aortic arch and winds around the patent Ductus. By following the nerve, one locates the Ductus. The duct runs more antero posterior than one expects and is about 1-1½ cm. in length, commencing at the aortic end where the adventitia of the aorta runs on to the Ductus, one clears the duct by means of absorbent held in a forceps, or by a curved forceps. The posterior region is the difficult part to clear and caution must be used or the vessel may be entered and alarming haemorrhage result. By progressing slowly we finally clear the duct so that an aneurysm needle can be passed around it and ligatures placed. Many types of ligature material have been used, and many methods of tying have been used. The types of ligatures have been: silk, cellophane, fascia and umbilical tape (5/32 inch).

The methods of tying and obliterating the duct are: two ligatures tied with a surgical knot and separated a little distance, purse string applied at each end of duct and double ligature in the centre, tying with 2 ligatures and then a piece of umbilical tape over these, or a piece of cellophane wrapped and tied around the duct. One should perhaps remember that one is ligating a vessel in continuity and apply the principle set down by Ballance—(1891)—in his treatise on ligation of vessels.

One must not tie the ligatures too tightly for fear of cutting through the vessel but it must be tight enough to obliterate the lumen and cause disappearance of the murmur.

Division and ligation of the duct is an ideal and in the hands of Gross is a safe procedure.

The mediastinal pleura is closed by a few interrupted sutures. The chest wall is now closed, leaving a catheter in one end of the wound which enters the chest. The air can be withdrawn through this as the lung is inflated by the anaesthetist and then the catheter removed and the wound closed.

Postoperatively the patient receives oxygen by nasal catheter and Penicillin by hypodermic. They are also treated for any symptoms that may arise—such as atelectasis, and fluid in the pleural cavity. Convalescence should be uneventful and smooth, and the patient out of bed in 10 days.

### Report of a Case

Miss D., age 25 years, was seen in January, 1945, complaining of pain in the back, between the scapula, also of tiredness and a pain in front of the chest.

The pain in the back had been present for 2 years—off and on, occurring especially when walking. For over a year now had noticed she tired easily and became very exhausted by the end of a days work. She also seemed to have frequent "colds."

In November, 1946, had an episode of "black-out"—following which she felt her heart beating irregularly.

When first seen she claimed she got short of breath very easily but could walk good distances slowly. She seemed to have become heart conscious.

**Examination**—A well nourished, healthy looking young woman, who was rather lackadaisical. No evident cyanosis. Chest seemed clear of adventitious sounds and had good expansion. The heart showed a regular rhythm of 85 beats per minute. It was enlarged to the left a slight amount. There was a marked loud to and fro murmur present, with maximum intensity at 2nd left interspace, and a thrill was easily felt in the same region. Blood Pressure, 135/65. The liver edge was just palpable, spleen not felt, and no edema of extremities.

**Laboratory Findings:** Urine, negative. Blood, hemoglobin 72%, erythrocytes 4,140,000, leucocytes 7,300. Wasserman, negative.

**Electrocardiograph:** Depressed RST waves in lead 3.

**X-Ray Film:** Slight cardiac enlargement to the left. Pulmonary conus enlarged. There was no pressure on the oesophagus shown by giving a barium swallow. There was exaggerated linear markings throughout both lung fields. Fluoroscopically no hilar dance was seen.

**Diagnosis:** A Patent Ductus Arteriosus, with commencing heart enlargement and some embarrassment. No evidence of subacute Bacterial endocarditis.

### Operation, November 29, 1946

Under Cyclopropane anaesthesia given through an intratracheal tube, an incision was made below the left breast—lifting this organ up, incised along 2nd interspace from the side of the sternum to anterior axillary line. The chest was entered, the lung pushed away from the mediastinum and following the operative procedure described above, the patent Ductus was found. It was 1 cm. in length and of a similar width—a marked thrill was felt near its pulmonary end. By means of blunt dissection the duct was cleared to allow an aneurysm needle to be passed. Two pieces of umbilical tape—(5/32" in width)—were passed around the duct and tied firmly. This obliterated the thrill completely. The mediastinal pleura was closed with interrupted sutures, and the chest closed, after expanding the lung and drawing off air by means of a catheter. A firm dressing was applied over the incision.

**Post-Operative Care:** Oxygen was given by means of a nasal catheter, Penicillin was used in a dose of 40,000 units every 3 hours. The left arm was kept to the side for 3 days and then movement was allowed.

Except for a small pleural collection of fluid, which did not require aspiration, her course was smooth. The murmur and thrill had completely disappeared and did not return.

An X-Ray of the chest taken 10 days post-operatively, showed considerable clearing of the linear markings. This was quite definite. The size of the heart had not changed.

**December 30th, 1946.** X-Ray: Heart smaller than pre-operatively. There was marked clearing of the lungs as compared with films taken before the operation. The young lady returned home and was not seen until **July, 1947.** At that time was feeling well—had gained weight and had no symptoms. Examination showed a normal sized heart, apex beat 3½" from mid-line. No murmur or thrill. Blood Pressure 126/86.

**X-Ray Film:** Width of heart within normal limits. Slight prominence of pulmonary conus. Lung fields clear.

She was allowed to return to work.

### Summary

Patients with an uncomplicated Patent Ductus Arteriosus run the risk of heart failure and subacute bacterial endocarditis.

Ligature or division of this duct can provide striking relief in a high proportion of cases. An absolute indication for ligature is early infection.

It is also a reasonable proceeding in cases which show signs of commencing heart failure.

A report is given of a successful ligation of a Patent Ductus Arteriosus in an adult.

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# ANAESTHESIOLOGY

Edited by D. G. Revell, M.D., Anaesthetist, Children's Hospital, Winnipeg
and Fred A. Walton, M.D., Anaesthetist, Winnipeg General Hospital

## Abstract

Forbes, G. B., Salmon, G., and Herweg, J. C. Post-tracheotomy Mediastinal Emphysema and Pneumothorax, Journal of Pediatrics, No. 2., Vol. 31. Pp. 172-194.

(In view of the recent wave of acute laryngotracheobronchial infections, some of which required life-saving tracheotomy, it is felt that this topic may well be discussed here as the anesthetist, by virtue of his experience with respiratory problems, is often "in" on the treatment of these cases).

These workers have made observations on 120 cases requiring tracheotomy over a four and a half year period, 1942-6, at the St. Louis Children's and City Hospitals. The study includes all cases in which tracheotomy was done, whether elective or emergent to relieve respiratory obstruction due to any cause, ranging from acute infection to post-bronchoscopic laryngeal edema. Sixty-eight per cent of the cases were under two years of age and twenty-two per cent between the ages of two and five.

Besides close clinical observation, X-ray studies were made where possible to check on mediastinal emphysema, referred to as ME, and pneumothorax, abbreviated to PT. Eight tables covering data from various aspects are shown and there are X-ray photographs to demonstrate the two post-tracheotomy complications under study. Experimental work on dogs, done to study the mechanism of air entry, is described and illustrated. A sufficient number of controls were observed to render the conclusions reliable.

No mention is made as to the type of anaesthesia used but one would assume that some form of general anaesthesia was the routine where bronchoscopic t .be or endotracheal catheter was used. At any rate they demonstrate that the use of an indwelling bronchoscope or intubation tube during the operation definitely minimized the incidence of post-operative ME and PT. As not all cases were checked by X-ray there is a difference in the incidence of these complications in the group as a whole as against those studied by means of this aid. Twenty-five per cent of the whole group developed ME and ten per cent developed PT—while closer study by X-ray raised the diagnosis of these complications to 41 and 15 per cent respectively. When an adequate airway during operation was not provided by bronchoscopic tube or endotracheal catheter the incidence of post-operative ME was 70% greater and PT was eight times greater than when the obstruction was obviated by this means during operation.

As one would expect, the incidence of ME and PT was higher in proportion to the degree of respiratory distress present prior and during operation. ME was highest in the cases, having tracheotomy to relieve the distress of laryngotracheobronchitis. In some cases where embarrassment was particularly acute tracheotomy had to be done without benefit of intubation and in others edema of the glottis precluded the employment of pre-operative insertion of an airway.

The elapsed time following operation till ME and/or PT began to develop ranged from 20 minutes to 12 hours—average 3.8 hours. ME took from 2 to 11 days to disappear. Post-operative ME may develop even where there has been no respiratory embarrassment before operation. Precordial "crackle," pathognomonic of ME, was not observed in more than six cases, due perhaps to the examination being carried out with the patient in the supine position. Subcutaneous emphysema may or may not occur in conjunction with ME. Minimal ME, detected only by X-ray may cause no symptoms, but more extensive spread causes dyspnea of varying degree, often requiring oxygen to prevent cyanosis. The most severe cases were those suffering from streptococcal laryngotracheobronchitis and diphtheria where toxemia and membrane formation further complicate the picture. Pneumothorax would appear to be secondary to ME but may occur by itself. Where it is extensive enough to produce cyanosis relief is immediate when aspiration is performed. More moderate degrees of PT may be missed unless X-ray studies are made. They resolve themselves in a matter of a few days.

There are several case reports which show that treatment of these cases is not over when tracheotomy has been completed. These complications must be anticipated with the assistance of the radiologist. As a matter of fact pre-operative X-ray studies may reveal one or both of these conditions already developing. Mediastinal and/or pleural aspiration usually give relief where distress is marked but some cases do not respond even to continuous pleural suction and death may ensue from the hypoxia and circulatory embarrassment produced by the mechanical displacement of mediastinal structures.

Space prevents going into the details of the experimental work. Briefly, dogs were tracheotomized and then the effects of partial or total occlusion of the airway for short periods studied.

Trypan blue and lipiodol were instilled into the tracheotomy wound and the route taken and extent of ME followed by means of X-ray, and checked at post-mortem by opening the mediastinum and chest under water.

The results of the animal experiments were not uniform but served to show how the suction created by diaphragmatic pull during occlusion of the airway was capable of drawing air and oil down into the areolar tissues of the neck and mediastinum. Rarely was PT found. It was felt that these experiments were not entirely analagous but they assisted in understanding the mechanism of these complications.

The discussion which follows points out that the incidence of ME and PT was similar in series reported by other observers. PT may occur without ME even before the trachea is incised. Many cases are likely missed through lack of close observation or recognition. Both ME and PT can occur without tracheotomy and it is felt that the air in these cases arises from ruptured alveoli near the lung root, travelling along the vascular sheaths to the mediastinum or rupturing into the pleural space. It would appear that this intrinsic source was the result of increased intrabronchial pressure rather than unsatisfied negative pressure from occlusion of the airway. Their clinical data shows the advisability of pre-operative bronchoscopy or any other method of assuring an adequate airway during tracheotomy such as intubation. Providing this free airway lowers the incidence of ME from 50% to 28% and of PT from 24% to 3%. The cases of laryngotracheobronchitis (25% of cases studied) accounted for 37% of the ME complication and 30% of the PT. This latter is thought due to the involvement of the whole respiratory tract by disease and even though tracheotomy has relieved the laryngeal obstruction, some dyspnea may continue due to accumulation of thick secretion and widespread pathological changes in the tract and lung. The smaller the child the more difficult is the technical problem at operation—short neck—mediastinum easily inadvertently opened—patient less co-operative—more inclined to struggle. (This suggests that local anaesthesia was used).

**Practical Implications**

Assure an adequate airway at all times in tracheotomized patients. Perform tracheotomy as early as possible once the need is apparent, before extreme dyspnea develops, permitting more deliberate dissection. Use indwelling bronchoscopic or endotracheal tube during operation. Avoid lifting the pretracheal fascia away from trachea as this opens up another cervical fascial plane. Incise neck as high as possible without endangering the first tracheal cartilage, thus minimizing the likelihood of inadvertently opening the mediastinum. Do not pack the wound as this does not prevent ME and increases the likelihood of infection. Unrelaxing vigilance in post-operative period to prevent any obstructing accumulation of secretion or displacement of tube. Nurse should be specially trained in caring for these cases. Adequately humidified air, frequent carbon dioxide oxygen inhalations prevent formation and accumulation of thick secretion.

Intratracheal instillation of specially prepared solution together with vasoconstrictor such as neosynephrin. See footnote.

Administration of sulphonamides and penicillin are indicated. Be on lookout for ME and PT whenever any untoward symptoms appear. Air in the mediastinum may be occult or malignant and can become fatal. When emphysema of mediastinum can be demonstrated it can be removed by aspiration and the patient's life saved.

Careful and frequent post-operative examination and X-ray exam (lateral plate preferably) within six hours should be routine. The precordial "crackle" is pathognomonic. Advancing ME leads to respiratory and circulatory failure, with rapid weak pulse, fall in blood pressure, congestion of neck veins, dyspnea, cyanosis, restlessness, exhaustion, coma. Withdrawal of the air from mediastinum or pleural cavity is done with oiled syringe and fine needle. This gives prompt relief and usually need not be repeated. The exceptional case of PT may require repeated or continuous aspiration by closed-system intercostal syphon drainage. ME aspiration is done through second or third inter-space close to sternum directing needle behind sternum, exploring carefully for the various sized bubbles of air. The heart and great vessels are out of the way, being pushed back by the air. Cervical mediastinotomy has been successful in treating ME.

Fifteen references. Hartman's Solution, for instilling into trachea: NaCl 0.73%, KCl 0.04%, $CaCl_2$ 0.01%, $MgCl_2$ 0.02%; and $NaHCO_3$ 0.2% prepared as described by Hartman, J.A.M.A. 103, 1349, 1934.

**Note by Ed.**

At the Children's Hospital in Winnipeg, since the 23rd of Dec., 1947, we have done seven tracheotomies to relieve the dyspnea of acute laryngotracheobronchitis. That surgical interference was necessary in each case was obvious to anyone seeing them. In every case marked indrawing was present and most required oxygen to relieve cyanosis. Two had convulsions from hypoxia. One reached the point of exhaustion and complete obstruction on arrival in the operating room and died before tracheotomy could be completed. One was moribund following a con-

vulsion on the ward but with good fortune an endotracheal catheter was inserted through a very edematous larynx and the child's life saved.

Two cases showed post-operative emphysema, one of the chest wall about the sternum and the other of the deep cervical fascia above the level of the tracheotomy. One case developed an oesophageal fistula which discharged beside the tracheostomy opening, and was possibly the result of surgical damage during isolation of the trachea. We have not made X-ray studies but none developed signs or symptoms of ME or PT.

We feel that general anaesthesia creates optimum conditions for both surgeon and patient. Here, if anywhere, the experienced anaesthetist is essential. Helium-oxygen is used as the vehicle for cyclopropane induction and warm moist ether anaesthesia. Only atropin is used for premedication. Intubation is done by direct vision. In one case we used an indwelling bronchoscope but felt this was not as safe as the use of a Portex endotracheal catheter. We have a complete set of Portex plastic Magill catheters and the size chosen is the largest which can be easily inserted through the glottis. The indwelling catheter is of considerable help to the surgeon in locating the trachea. Toilet of the trachea is done with urethral catheter as needed during operation and before the tube is withdrawn. As only light anaesthesia is necessary these cases usually react before leaving the operating room.

Our tracheotomy cases are nursed in a room where the humidity is kept very high by steam jets run off the heating system. We have not used Hartman's solution. Oxygen is given, where needed, by sufflation under a square piece of Venetian cloth attached to the end of the tube and laid over the tracheotomy tube and neck. Carbon-dioxide oxygen inhalations have not been used. The nurses on these cases are given special instructions re the care of the airway and the use of oxygen and suction.

The one case that died on arrival in the operating room was an example of how suddenly the situation can change. The child was a good color in the oxygen tent but very audibly dyspneic and indrawing was not as marked as we had seen in other cases. Restlessness was marked but no one felt the child was about to become completely occluded. It was carried to the operating room by a nurse and on arrival appeared to have absolutely no airway. By direct vision an endotracheal catheter was inserted but it appeared that the obstruction was beyond the tube. The surgeon quickly performed tracheotomy but there was no response to inflation of the lungs with oxygen or other resuscitation measures. On withdrawing the tube it was found that the end was completely plugged by inspissated secretion. Such a complication of intubation has not been found in the literature.

In only two cases was edema or inflammatory swelling of the glottis seen. The others appeared to be obstructed by the accumulation of thickened exudate just below the glottis. This material was often visible through the glottis, dark, rough and shiny. In one case a piece of this was removed, and found to be quite putty like at one end softening away to stringy exudate at the other. The fatigue of dyspnea and perhaps toxic depression render coughing ineffectual in expelling this tenacious secretion. Its accumulation at the narrow defile of the respiratory tract is the cause of the respiratory embarrassment in this type of case. Steam inhalations and conservative treatment might prevent this progressive obstruction but once it has developed tracheostomy appears to be the only solution.

All six cases have been discharged, well, with tracheostomies healed. D. G. R.

# SURGERY

Edited by S. S. Pelkoff, M.D.

## Prostate Gland

I. M. Shankman, M.D.

To the enquiring or post-graduate student the mechanism of prostatic obstruction has been a very difficult subject to master, owing to the fact that our standard text books present rather vague descriptions of known facts. Some of these facts are not sufficiently well correllated for one to explain pathological events.

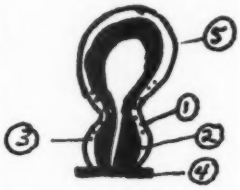
Figure 1


Side View

1. Symphysis pubis
2. Bladder
3. Urogenital diaphragm
4. Prostate gland
5. Rectum
6. Space of Retzius
7. Seminal vesicle and common ejaculatory duct

Figure 2


Figure 3




1. False capsule of gland
2. True capsule
3. Plexus of veins in between capsules
4. Urogenital diaphragm
5. Endopelvic fascia continuous with false capsule

Coronal section to show genito urinary organs from behind after J. C. B. Grant

1. Ampulla of vas
2. Seminal vesical
3. Prostate gland
4. Levatores prostatis (Levator Ani)
5. Bladder
6. Ureter

### Anatomy

The prostate gland is a glandular tissue in a fibromuscular stroma, its muscle fibres being directly continuous with the outer layer of the muscular coat of the bladder. Its size and shape is that of a chestnut measuring 1¼ inches in length by 1½ inches in breadth, average weight 4½ drachms. It surrounds the first 1¼ inches of the Urethra. It is described as having a base or superior surface which faces the bladder and is pierced by the Urethra; an apex, which rests on the superior layer of the Urogenital diaphragm and the prostatic urethra emerges from apex of the gland; a posterior surface, which rests on the anterior wall of the rectum; two inferolateral surfaces which are related to and supported by that part of Levator Ani called Levatores Prostatis; an anterior border which lies behind the symphysis pubis separated from it by the space of Retzius in which there is some fat.

It has two capsules. (a) True—which is a peripheral condensation of its fibro muscular layer (Cabot and others deny its existence. They claim that the so-called true capsule is merely compressed prostatic tissue from which an adenoma is shelled out). (b) False capsule—formed by visceral layer of pelvic fascia, which gives it a sheath common to bladder and seminal vesicles.

The Pudendal Plexus of veins lies between the two capsules. The plexus receives the deep dorsal

vein of the penis and above it is continuous with the Vesical plexus which in turn drains into the Internal Iliac vein. The prostate is therefore very vascular in front, at sides and superiorly (more so in Prostatic Obstruction), but posteriorly it is avascular. Furthermore, posteriorly there exists a surgical space of cleavage through Denonvillier's fascia which will presently be described. Two condensed bands of endopelvic fascia bind the gland to the back of the pubis-puboprostatic liga-

**Figure 4**


1. Bladder
2. Ureter
3. Vas Deferens
4. Seminal vesicle
5. Common ejaculatory ducts
6. Posterior lobe
7. Middle lobe
8. Anterior lobe

ments, and through its muscular connection with the bladder it receives additional support from the Pubo-Vesical ligaments.

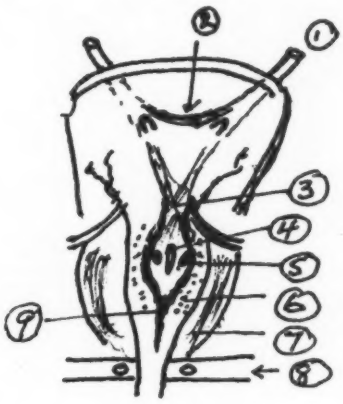
It is divided into five lobes (division is indistinct), by the passage of the urethra through the gland and by the ejaculatory ducts which pierce it obliquely from behind downwards and forwards. An anterior, posterior, two lateral and a median lobe.

Anatomically the portion of Prostate that separates the urethra from the utricle masculinus and ejaculatory ducts is called the Median lobe. It normally causes a bulge of the prostatic urethra called the Verumontanum and a slight elevation of the internal urethral meatus called uvula vesicae. On either side of the urethral crest (Veru Montanum) are the prostatic sinuses into which open the ducts of the prostate.

A glance at the Embryology will aid us in understanding the formation of the prostate and related parts.

The Mesonephric duct (Wolffian duct) expands distally as it opens into the Cloaca. An outgrowth from the Wolffian duct forms the ureter.

**Figure 5**




1. Ureters
2. Interureteric bar of Mercier
3. Trigonal muscle
4. Opening of Utriculus Masculinus
5. Opening of Common Ejaculatory duct
6. Openings of Prostatic glands into Prostatic sinus.
7. Prostate gland
8. Bulbo Urethral glands Urogenital diaphragm
9. Verumontanum or urethral crest

The base of the bladder, ureteric orifices, trigone and Inter Ureteric bar and prostatic urethra are all formed from the lower expanded portion of the wolfian duct, which normally opens into the Cloaca at the level of the Verumontanum on either side of the Utriculus Masculinus which is the remains of the Mullerian duct and is the homologue of the Uterus in the female. The mesonephric duct in the male is enlisted to form the Vas Deferens. From the Ampulla of the vas, a diverticulum is given off on its lateral side which becomes the seminal vesicle, hence the common ejaculatory duct is common to vas and vesicle.

About the 3rd month of intrauterine life, buds

of epithelium (about 63 in number) sprout out from the prostatic urethra, some growing anteriorly, some laterally and some posteriorly. These become canalized and owing to their mode of disposition relative to the urethra, form anterior, posterior, lateral and middle lobe. The glandular portion consists of two distinct types of secreting tubules.

1. External or prostatic glands proper which make up the major portion of the gland. They consist of units of follicle-like tubules, each equipped with its excretory duct which opens into the prostatic urethra, these glandular units begin to branch about 1 cm. from their orifices and after giving off several sub-divisions end in alveoli. The alveoli are lined by the usual simple columnar epithelial cells, their inner portion often showing acidophilic granules. A pseudostratified epithelium with two rows of nuclei occasionally is present. The basement membrane consists of delicate connective tissue threads. The ducts are supplied with a mucous membrane composed of simple columnar cells except at their orifice where they are replaced by transitional epithelium similar to that of the prostatic urethra.

2. The peri-urethral or inner units of tubules consist of

(1) Small mucosal tubules located in the roof of the urethra over the verumontanum.

(2) Longer branching submucosal glands whose ducts open into the prostatic urethra alongside those of the prostatic glands proper.

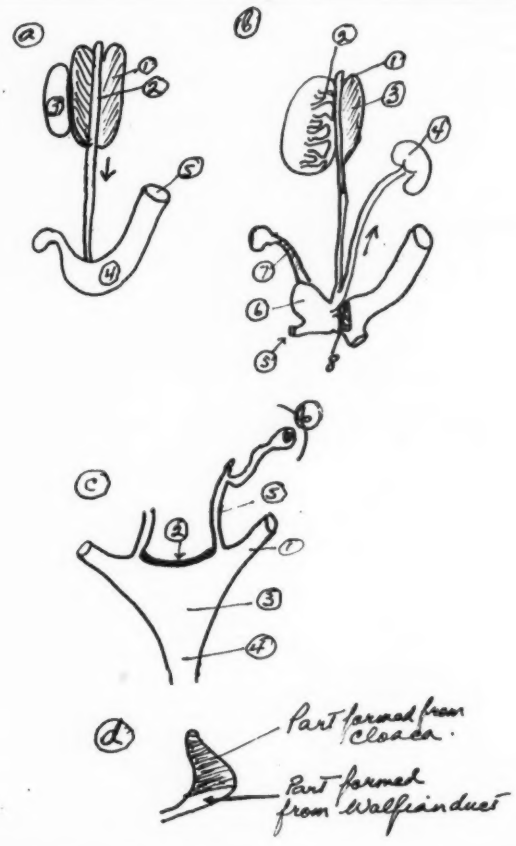



**Figure 6**

(a) 1. Mesonephros
2. Mesonephric duct which in the becomes the Vas Deferens
3. Sex
4. Cloaca
5. Rectum (Hindgut)

(b) 1. Mesonephric (Wolffian) duct
2. Epididymis
3. Mesonephros—its tubules join the mesonephric duct to form epididymes
4. Metanephros—gives rise to future kidney
5. Urethra
6. Bladder—the part formed from Cloaca
7. Urachus
8. Urorecta septum

(c) 1. Expanded portion of lower end of Wolffian (Mesonephric) duct
2. Inter ureteric bar of Mercier
3. Trigone of bladder
4. Urostatic Urethra
5. Diverticulum from Wolffian duct forming the ureter, pelvis and calyces and collecting tubules joining with distal convoluted tubules from metanephros to form the kidney

(d) Showing bladder—shaded part formed from cloaca, light area from Wolffian duct.

The peri-urethral units of tubules are of great clinical importance, because it appears that prostatic hyperplasia arises from these glands and not from prostatic glands proper. The posterior prostate glands proper are peculiar to male, but the anterior and lateral group have their homologue in the female as Skene's glands. The anterior lobe contains very little periurethral glandular tissue, adenomata seldom if ever occur here. The posterior lobe apparently contains none as adenomata never occur here. Adenoma may occur

in the lateral lobes, but the middle lobe contains much glandular tissue and is a site for adenomata "Par excellence." The Subtrigonal and subcervical glands of Alberran are merely periurethral glands situated at special points where slight enlargement will cause obstruction to the urinary flow.

Early in foetal life the peritoneum extends as a pouch behind the prostate. This pouch is ultimately shut off from the peritoneal cavity and exists as two layers of fascia with a potential space between. This is the fascia of Denonvilliers.

The longitudinal muscle of the rectum does not end abruptly at the external sphincter, but sends down processes, one of which becomes the intermuscular septum, another process enters the ischio rectal fossa, one process goes anteriorly to become attached to the central point of the perineum as a superior and inferior recto urethralis, which serves as an anchor for the rectum.

According to Souttar, the muscle fibres of the bladder wall are gathered into two postero-lateral bands which embrace the internal orifice of the urethra, pass around it to form a sphincter and are lost anteriorly in the substance of the prostate. Within this loop run the muscle fibres of the trigone and two main bundles of these fibres may be traced downwards from the ureters to the verumontanum lying just beneath the mucosa of the prostatic urethra. It follows that on each side there is a muscular band derived from the trigone and partly from the bladder wall. These bands derive practical importance from the fact that between them an enlarged middle lobe of the prostate may push its way upwards into the bladder and interfere with the whole mechanism of micturition. As the growth enlarges, it pushes mucous membrane of the urethra before it and extends into the bladder and may entirely block the internal meatus. The effort of straining to urinate squeezes it onto the internal meatus which is thus entirely blocked. It is obvious that the growth has insinuated itself through the grip of

**Figure 7**

1. Urethra
2. Mucosal glands
3. Submucosal (Peri-urethral glands)
4. Prostatic glands proper

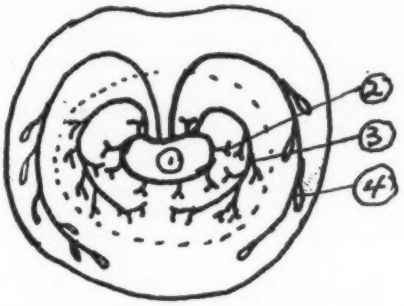
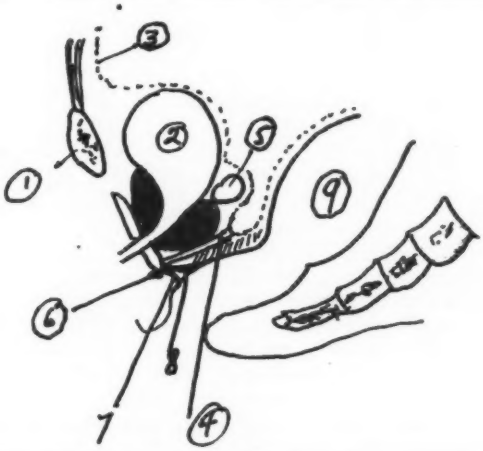



**Figure 8**

1. Symphysis pubis
2. Urinary bladder
3. Peritoneal reflection
4. Denonvilliers fascia enclosing retro-prostatic space of Proust
5. Seminal vesicle
6. Central point of perineum
7. Inferior recto urethralis
8. Superior recto urethralis
9. Rectum



the internal sphincter, between the mucous membrane of the floor of the urethra and the internal sphincter. This muscle cannot therefore shut off the prostatic urethra from the bladder, the result being that urine is constantly trickling into this part of urethra. As it should normally contain no urine, the constant desire to pass urine which is so troublesome to those with enlarged prostates is ascribed to this fact (Lee McGregor).

In the operation of suprapubic prostatectomy, the surgeon enucleates the prostate from both its capsules, so that the pudendal plexus of veins is undisturbed. The prostatic urethra is removed with the gland, the patient becomes sterile. This arises from the fact that the prostatic urethra with its musculature has been removed with the prostate and though the ejaculatory ducts discharge into the prostatic cavity, it is now lined with fibrous tissue which is unable to expel its contents per urethram. Ejaculation therefore does not occur, the seminal fluid being voided at the next act of micturition. The patient is not impotent but sterile.

### Physiology

Very little is known of its physiology. There are no withdrawal effects following its removal. The epithelial cells are known to secrete acid phosphatase. In carcinoma of the prostate, there is obstruction to the ducts and the serum acid phosphatase is said to be increased.

A theory has been advanced that androgen excess is a factor in prostatic hypertrophy. This is based on observations that injections of testosterone in animals stimulates prostatic hypertrophy, however, contrary to that theory is the known fact that male hormone tends to decrease rather than increase with advancing years.

Oestrin is excreted in urine of males and can be isolated from testicular tissue. Zuckerman and Parkes produced prostatic hypertrophy by injecting oestrin into monkeys, fibromuscular overgrowth of the whole prostate together with epithelial stratification also occurs. Such effects can be counteracted by injections of male hormones, these facts taken in conjunction with the observation that the concentration of the male hormone in the urine of elderly men may be reduced while the excretion of oestrin remains unchanged have led DeJough, Lequer and others to the conclusion as to the cause of prostatic hypertrophy in man. They believe that an important factor leading to enlargement of the prostate is an imbalance between male and female hormones, diminished production of testosterone and relative excess of oestrin. In support of this hypothesis DeJough states that injection of male hormone in cases of prostatic enlargements prevents further hypertrophy and may actually cause shrinkage of the organ. Observations opposed to this view, however, is the fact that there is no increase of oestrin in the blood and urine of subjects suffering from prostatic hypertrophy and the fact that oestrin injections do not aggravate the condition. To quote Best and Taylor, "The whole question of causative factors in prostatic hypertrophy is rife with speculations and beset with contradictory observations and opinions. Established facts are few and difficult to obtain." Epithelial cells of prostatic carcinoma are dependent for their activity as in normal epithelium of the prostate upon the male hormone. It is upon this basis that castration has been employed in the treatment of carcinoma of the prostate. (It may be pointed out that orchidectomy is not necessary. For psychic reasons the Tunica Albuginea may be incised and the contents of the testicle scooped out). Since Androgen activity is neutralized by oestrogens, oestrogens may be administered and is effective by mouth (Stillboestrol or Dienoestrol).

### Surgical Approaches

1. For many years Freyer's stage operation (Suprapubic transvesical) has been employed. The mortality rate is about 6-10%. In hands of average surgeons it is still the best method of approach. The arguments against it are that it is uncomfortable, often a lengthy post-operative course. A large ragged cavity is left, there is considerable loss of blood both during and after operation, a relatively high incidence of post-operative infection and considerable incidence of secondary haemorrhage. In an effort to make the elderly gentleman more comfortable and make the operation more surgical Harris, of Australia, retrigonized the bladder, arrested haemorrhage by sutures, and closed the ragged cavity. The objection was the buried sutures in an infected or potentially infected cavity.

2. Young introduced perineal approach. The advantage is that the approach is through an avascular area. In the hands of the expert it is a very good operation. A curved incision convex forwards is made ½ inch in front of anus and is deepened until the central point of the perineum is reached, blunt dissection with fingers defines the lateral limit of that structure. The central point of the perineum is divided transversely, the superficial transverse perineal muscles, bulb of urethra and inferior fascia of urogenital diaphragm are drawn upwards and forwards, sphincter ani and anal canal backwards, the fibres of the recto urethralis are put on a stretch and divided. This exposes the dull posterior layer of Denonvillier's fascia, which, when cut through, exposes the shiny anterior layer of Denonvillier's fascia. The rectum can now be easily pushed back, the urethra is incised longitudinally. The incision must not be

more than ⅓ inch long and must avoid the external sphincter of the urethra. Young's prostatic retractor is now passed into the urethral incision and by its means, the prostate is drawn down and back until it appears in the wound. Its sheath is incised on each side and the two halves of the prostate are removed separately.

Objections are:

(1) Need an expert.

(2) Incontinence varying from 5.8 to 9% in the best hands.

(3i) Urethro Rectal fistula.

(4) Persistent perineal fistula.

(5) Difficult nursing care owing to risk of contamination of wound from adjacent rectum.

3. McCarthy's Transurethral.

It is a difficult procedure in which to acquire proficiency. There is considerable blood loss when dealing with large glands and frequent persistent low grade urinary infection. There is the incidence of post-operative urethral strictures and the risk of recurrent obstruction to the incontinence. It is the only treatment for obstruction due to fibrosis (fibrosis of posterior lip of vesical sphincter due to prostatitis).

4. Millen's Retropubic, Lancet, Dec. 1, 1945.

He claims (a) That it is an extravesical procedure thus avoiding suprapubic drainage with its risk of slow closing or persistent fistula.

(b) Applicable to all types of prostatic obstruction.

(c) Relatively short and shock free.

(d) Appears anatomically sound, no important organs interfered with or disturbed.

(e) Mortality singularly low.

(f) Easy post-operative course on patient and staff.

(g) Whole of obstructing tissue is removed, recurrence is obviated.

(h) Post-operative hospital stay is seldom more than two weeks.

A three-inch midline incision from top of pubic cup goes through between recti, the finger sweeps the peritoneum and fat up. A Harris triblade retractor is inserted into wound, the posterior blade pushes the bladder back. A flexible light is introduced resting on Pubic bone. The leash of veins are seen and under run. A curved incision convex down 1 cm. distal to bladder neck is made through false capsule.

The distal flap is undermined downwards toward apex of gland with Devine's long dissecting forceps, upper flap retracts owing to pull of several pubo vesical muscles. An inverted V is carried down to adenoma, which is readily recognizable by its typical whitish appearance. It is elevated and a lozenge shaped space is opened up. The retractor is removed and the adenomatous mass and lateral lobes are shelled out. A Harris catheter is passed per urethram through prostatic bed into bladder. The true capsule is sutured and a drain is passed to sutured line. Bilateral Vasectomy is done and the catheter is irrigated with 1/5000 flavine to free it from clots and oz. 1V is left in. Catheter is out on the 6th post-operative day. Since the introduction of this technique by Millen in 1945, various reports have since come in. Bleeding is quite a troublesome complication and various complications outlined elsewhere have occurred.

It seems that surgery of the Prostate is still very much in its experimental stage, though there seems to be general agreement that for carcinoma of the prostate the treatment of choice is to provide drainage through the obstructing tissue by punch and administer Stillboestrol or dienoestrol or orchidectomy in some cases that do not respond to oestrogens.

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## Allergists Meeting

The annual meeting of the American Academy of Allergy, held in St. Louis, Missouri, was very well attended. There was a good representation from Canada, five delegates from Montreal, one from Toronto and three from Winnipeg, Dr. Arthur Birt, Dr. "Chuck" Walton and myself. We had an all-Canadian table at the banquet. Dr. Wally Alexander visited with us and we toasted Winnipeg, Manitoba and Canada.

The highlights of the meeting were the Colloquia on different topics such as the Management of Asthma; drugs used in Allergic Conditions, and Dietary Problems in Allergy. The symposium on Antihistaminic drugs showed that these are not a panacea for all allergic disturbances and there is much research work to be done yet to prove their real value.

Manly Finkelstein.

# PAEDIATRICS

Edited by S. Israels, M.D.

## Celiac Syndrome

**II.** Fecal excretion in congenital pancreatic deficiency at various ages and with various diets, with discussion of the optimal diet. Dorothy H. Andersen, M. D. From the Departments of Pediatrics and Pathology, Columbia University of Physicians and Surgeons, and the Babies' Hospital. Am. J. of Dis. of Children, Vol. 69, No. 4, April, 1945.

The problems of congenital pancreatic deficiency are those of nutrition and those presented by the characteristic infections of the respiratory tract. The author attempts to cope with these problems by use of a dietary regimen to produce adequate nutrition and growth and an improved resistance to respiratory infection.

The effects of diet are set forward in three experiments. Experiment 1 is an analysis of the fat content in the feces of patients receiving a normal diet. It was found that in those patients under 6 months of age the stools appeared normal except for a sharp and penetrating odor. This may explain why the stools of infants with this disease are often considered normal during the first few months of life. The proportion of fats in the feces was grossly increased, however, as compared with controls. After 6 months of age, with the addition of solids to the diet, the weight of feces excreted daily was well above normal. The characteristic stool was large, and well formed. Loose or watery stools were unusual and no foamy stools were encountered. The absolute amount of fecal fat was greater in the older children but the percentage per weight of dried feces was less. This was not due to better utilization of fat but rather due to poorer utilization of other food constituents.

The 2nd experiment deals with the effect of the reduction of dietary fat and the effect of oral administration of high lipase containing pancreatin. Reduction in intake of fat results in decreased excretion of fat, as may be expected. The use of pancreatin resulted in both a better utilization of dietary fat and also a decrease in the total weight of feces. The favorable results have encouraged the routine use of this preparation in the treatment of this disease.

In the 3rd experiment, the effect of various diets on fecal excretion of carbohydrate, protein and fat are studied. The primary object was to discover an optimal diet for patients with pancreatic deficiency, specifically the type of diet resulting in the greatest retention of total calories and of protein. Patients with this disease do better on the diet of patients with celiac syndrome than on the ward diet. This diet is high in protein in the form of protein milk or pot cheese; it is low in cereal starch and sucrose and high in fruits and vegetables; the fat content is low.

It seemed possible that a fat with a high iodine number, such as corn oil, might be better utilized than butter; that starch in some form might be tolerated and used by patients with this disease if not by those with celiac disease; that raw milk might be substituted for protein milk and that sucrose might be useful since it does not require the use of pancreatic ferments.

It was found that diets containing large amounts of fat produced greater loss of protein, carbohydrate and fat. Unsaturated and saturated fats were about equally well utilized. Protein is utilized by these patients no better than fat. Adequate retention of protein for growth and nutrition was obtained only with diets deriving 21% of their calories from protein. Carbohydrate was utilized in the form of cereal starch better than banana. Bread and oatmeal were utilized as well as potato and oatmeal. Starch and sugar were clinically well tolerated.

The optimal diet suggested is as follows: The protein should provide 25% of the calories; the proportion of fat should be small, but eggs and fat soluble vitamins should be included; the carbohydrate should be provided in part as sugar, and for older children part of it may be in the form of cereal starches and potato if these foods are clinically tolerated.

11 references, 7 tables.

B. Shuman, M.D.

**III. Dietary therapy for congenital pancreatic deficiency.** Dorothy H. Andersen, M.D., New York, Am. J. Dis. Child., Volume 70, No. 2, August, 1945.

This paper is a report of the results of the dietary therapy used in a series of 38 cases of congenital pancreatic deficiency. The therapy is directed towards the discovery of the optimal diet for nutrition, growth, and the control of infection of the respiratory tract. These cases were studied before penicillin became available. The sulfonamides proved of limited usefulness in the treatment of respiratory infections.

Appropriate treatment has brought about a more hopeful prognosis in cases of congenital pancreatic deficiency where formerly it has been considered hopeless.

The diet used provides (1) a high caloric intake to allow for inefficient utilization of food, (2) low dietary fat. The essential lipids, however, must be included in the form of eggs. Also the fat soluble

vitamins A and D are given in large doses in oily preparations. (3) Protein intake should be approximately double the usual amount for the patient's age (6 gm. per kilogram of body weight per day, or more). This protein has been given as milk, cottage cheese, lean meat, fish, eggs, protein or skim milk. (4) The carbohydrate intake is high since it must provide calories usually given as fat as well as those usually given as carbohydrate. Dextrose, banana, and banana powder are given to marasmic infants. Sucrose is usually well tolerated by infants as are fruits and vegetables. Potato or cereal starches are given to children over one year old who are doing well. (5) Vegetables are given in plentiful amounts and offsets the excessive loss of minerals in the feces. (6) Supplementary vitamins A, D, K and C are given regularly and liberally. (7) Pancreatin has been given since it has a definitive though mild effect on retention of fat, starch and protein.

In the evaluation of dietary therapy in terms of survival it is found that success depends on whether treatment is begun (1) before or soon after the appearance of a persistent cough, in which case the results are favorable, (2) at the stage of chronic cough in which case growth is delayed but gradual improvement may be expected, (3) at the stage where chronic cough is complicated by purulent staphylococcic pneumonia in which case a fatal outcome was not averted.

Analysis of the respective values of low fat diet, Vitamin A therapy and pancreatin resulted in the conclusion that relaxation of either of the first two in the regimen causes a recurrence of infection, the administration of pancreatin exerts less influence but is useful.

In considering the physical status of surviving patients with this permanent disability, the minimum handicaps are, (1) large appetite remaining under a controlled diet, (2) protuberant abdomen, and (3) the excretion of one or more large foul stools per day. Chronic bronchitis, paranasal sinusitis and bronchiectasis may occur in the less fortunate cases. Moderate retardation of growth and poor muscular development are dependent on the severity and duration of the infection.

Overprotection and isolation of the child plus the anxiety of the parents are important features in the therapeutic problem of this disease.

14 references, 5 tables, 4 figures.

B. Shuman.

♦

**IV. Chemotherapy in infections of the respiratory tract associated with cystic fibrosis of the pancreas.** Observations with penicillin and drugs of the sulfonamide group with special reference to penicillin aerosol. Paul E. A. de Sant 'Agnese, M.D., and Dorothy H. Andersen, M.D., New York. Am. J. Dis. Child., Vol. 72, No. 1, 17-61, July, 1946.

This is the fourth article in a comprehensive series of coeliac disease written by Dr. Andersen. It deals with the bacteriology, pathology, and chemotherapeutic approach to the respiratory infection associated with fibrocystic disease of the pancreas.

Treatment of the nutritional aspect has been dealt with in another of the series and seems to bear a direct relation to the respiratory tract involvement since the latter does not appear in those few patients receiving adequate dietary therapy prior to the onset of cough.

The general pattern of the respiratory infection is uniform. The cough first appears in the first six months of life and follows a mild coryza. It is accompanied by a failure to gain weight. Following this, when the cough is chronic, the x-ray shows increased vascular markings and cyanosis, and clubbing of the fingers may appear. Terminally, the x-ray may show the "snowflake" appearance resembling disseminated tuberculosis.

In some patients whose first symptoms appear after 6 months there may be a cough of progressing severity associated with bronchitis and bronchopneumonia. Finally, as in the previous type, cyanosis heralds the end. Rarely do untreated cases live beyond the age of 5 years.

**Pathology:** The lesions are both acute and chronic. The chronic lesions involve the secondary and tertiary bronchi which are thickened and infiltrated with lymphocyte and plasma cells and show tubular dilation. The reaction is mild in the trachea and primary bronchi.

On this chronic process acute suppurative inflammation is superimposed. This results in occlusion of the bronchial lumina. This pathology involves all the tree from trachea to bronchi.

The alveoli show emphysema or pneumonia or atelectasis.

**Bacteriology:** Hemolytic Staphylococci Aureus (coagulase positive) was isolated in 11 of the 12 patients at autopsy and from 2 living patients on lung puncture.

The isolated organism was tested for sensitivity to penicillin prior to the institution of therapy.

**Therapy:** When the study started in 1937 sulfa alone was available. It was found that sulfa was of little value once the cyanotic stage was reached. This is in direct contrast to the penicillin treated cases which offered more hope.

Sulfadiazine was effective as a prophylactic measure in recent infections but no definite dosage has been established. It is of no value in the chronic bronchitis group.

Penicillin, both by aerosol and by intramuscular route, is of no definite value. Aerosols are hard to give under the age of 1 year and this is a limiting factor in their use. However, as a rule,

20,000 units are given every 3 hours for 10 to 15 days and then omitted for the same length of time.

By this method no improvement is effected in acute upper respiratory infections, otitis or sinusitis. The drug is of value, however, in the lower respiratory pathology. It is of value even after the cyanotic phase is reached.

By the above methods the mortality of fibrocystic disease is reduced. It requires a combination of dietary therapy plus antibiotics—sulfadiazine during the stage of chronic cough to prevent intercurrent infections; and penicillin reserved for the suppurative bronchitic phase.

22 references, protocols of 15 cases, 4 tables, 5 figures. Sydney Israels.

♦

**VI. The relationship of coeliac disease, starch intolerance and steatorrhea.** Dorothy H. Andersen, M.D., New York. J. Pediat. Vol. 30, No. 5, 564-582, May, 1947.

Coeliac disease is defined in this paper as "those patients who have chronic or recurrent diarrhea some time between the sixth month and sixth year without demonstrable bacteriologic or anatomic basis and who are intolerant of a normal diet for the age but respond to dietary therapy, and at some time in their course have a protuberant abdomen and a slow gain in weight." The article reviews 93 cases who fulfilled these criteria and naturally excluded cases of fibrocystic disease of the pancreas, ileal stenosis or chronic infection due to Giardia, Ascaris or Salmonella. Assays of duodenal juice or trypsin were used to exclude fibrocystic disease of the pancreas.

All cases seem to follow a general pattern. This pattern consists of 3 phases—first, a prodromal period consisting of bouts of diarrhea associated with upper respiratory infection—usually the first bout occurs in the first month of life. The second phase begins about the age of one year and is characterized by weight loss, protuberant abdomen, loss of fat in buttock region. This lasts for about one year and responds to dietary therapy. Finally, the third phase is a prolonged period during which the child is well while on a diet and has relapses when the regime is relaxed.

The second period, designated as the critical period, constitutes what appears to be a multiple deficiency state superimposed on a constitutional defect which is the basic issue. Diet and vitamin supplements overcome this phase. Steatorrhea which occurs in this phase is **not an essential part of the disease** and is not therefore constant in all the phases of coeliac syndrome. Lipase in the duodenal juice is normal in all phases.

It is interesting to know that failure of starch digestion is consistently found in all 3 phases of the disease and also that amylase is constantly absent or diminished in the pancreatic juice. Protein requirement is also increased all through the disease. In estimating amylase in the duodenal contents, the author cautions that acid gastric juice destroys it and that in hypoacidity of the stomach some salivary amylase may enter the duodenum and increase the duodenal amylolytic activity.

In studying the stools with Lugol's iodine one must be sure that the granules of starch are extra cellular and that the specimen is fresh, unconstipated stool.

In addition to evidence of starch indigestion in all cases of coeliac disease, there is also evidence of defect in protein metabolism.

Allergy occasionally can give the coeliac picture and was suspected in 9 of the cases studied.

11 figures, 8 tables, 8 references.

S. Israels.

## Paediatric Meeting

The Areal Meeting of the American Academy of Paediatrics will be held at the Hotel Schroeder, Milwaukee, Wisconsin, June 28-30, 1948.

Members of State (Provincial) Medical Societies are welcome to attend. The registration fee will be $5.00 for such non-members together with a $5.00 registration for which each registrant receives a ticket to the banquet, making a total registration fee of $10.00.

Registration may be made ahead of time by writing to Dr. C. G. Grulee, Secretary-Treasurer, American Academy of Paediatrics, 636 Church Street, Evanston, Illinois, enclosing a check for $10.00 or registration may be at the time of the meeting.

# Hospital Clinical Reports

Reported by J. M. Whiteford, M.D.

## Winnipeg General Hospital

### Cholesteatomas

**Dr. E. J. Washington**

Of all cases of chronic otitis media two-thirds show a central perforation which provides good drainage and which will yield to conservative treatment. The remaining third are marginal. The commonest infecting agents in this group are tuberculosis and scarlet fever. In such cases epithelium from the external auditory canal may migrate through the perforation to the wall of the middle ear; from this epithelium constant exfoliation produces a pearl-like collection of debris which gradually increases in size and eventually may erode the walls of the middle ear cavity. Such erosion may involve the semi-circular canals, the jugular bulb, with subsequent thrombosis and septicaemia, or it may first involve the meninges, with subsequent meningitis. The diagnosis is made upon a history of chronic running ear and the observation of flakes of "blotting-paper" substance in the external canal or the discharge of foul-smelling, putty-like material. Very rarely cholesteatomas may develop from epithelial inclusions in the middle ear, and these are termed primary. However, the vast majority are secondary to infections and perforation, as noted above. Approximately one out of three cases of chronic otitis media with marginal perforation develop a cholesteatoma. Other symptoms may arise from the erosion noted above, and include vertigo, sensations of pressure, etc. The cholesteatoma itself may occasionally be extruded into the external canal.

**Dr. Childe:** Typical X-ray findings are those of an enlarged mastoid antrum in a sclerosed mastoid area, and when the cholesteatoma is small X-ray studies may give the first evidence of the condition.

Dr. Washington then presented the case of a man who, while working on a road grader, had his parka caught in moving parts and drawn tight about his neck. Emergency treatment included tracheotomy and supportive care. On first examination there was surgical emphysema of the neck and considerable oedema. These findings gradually subsided and the man is at present left with an abduction paralysis of the vocal cords as a result of damage to the recurrent laryngeal nerves. At the time of presentation he shows a minimal amount of movement. If this does not improve operative procedures may have to be undertaken to provide an adequate airway, but such operation will impair or destroy speech.

**Dr. Doupe:** Assuming that the recurrent laryngeal nerves behave as other peripheral nerves, this paralysis if it is due to contusion only, without degeneration, should improve within three to four weeks; if there is degeneration of the nerve then a period of three months may be required before improvement.

## Adenoid Cystic Carcinoma of Bronchus

### A Case

**Dr. C. B. Schoemperlen**

A man of 57 years was admitted with a history of cough and expectoration for four years. One week prior to admission the cough became aggravated and sputum increased and he developed a fever. The history and general appearance of the chest suggested the common sequence of emphysema with subsequent bronchitis leading to pneumonia. However, on examination the left chest was silent, and despite chemotherapy silence and dulness on this side became more marked. X-ray at this time showed increased infiltration in the left lung field with evidence of early atelectasis. Bronchoscopic examination revealed a large polypoid cystic tumor immediately distal to the origin of the left main bronchus. Approximately a cupful of sputum was aspirated from the bronchi beyond the tumor. Following this the tumor was removed and the base fulgurated.

Prognosis: This tumor probably began four years ago with the onset of symptoms as noted above. Local treatment is fairly satisfactory with this type of neoplasm, and more radical surgery could not be considered in a patient of this age in any case.

In general, patients with pulmonary infection who do not respond to chemotherapy should have bronchoscopic examination.

Dr. Penner reported tumor 1 cm. in diameter which on section proved to be an adenoid cystic carcinoma of the bronchus. This type of tumor occurs approximately once in every hundred lung tumors.

## A Case of Post-Thyroidectomy Exophthalmos

**Presented by Dr. J. B. R. Cosgrove**

**Discussed by Dr. N. L. Elvin**

The patient presented is that of a 39-year-old female of Icelandic origin. She was born on a farm in southern Saskatchewan and had a normal childhood development. Her menarche occurred at the age of 13; the onset was sudden and continued with no variation from the normal. She was

married at the age of 20. Three years later she gave birth to a male child. This delivery was followed by a post-partum haemorrhage and intermittent bleeding which continued for 6 months. At the age of 25 she had her second child; this delivery was normal. There have been no miscarriages.

She was quite well until January, 1938, when she began to have menorrhagia. This continued and developed into continuous daily bleeding. A hysterectomy was performed in September, 1938. She recovered from this but developed generalized urticaria which continued daily for about one year and then suddenly disappeared.

In January, 1940, she had an operation for "adhesions of the bowel." Following this she was quite well until October, 1946, when she developed all the classical symptoms of thyrotoxicosis. At this time she states her eyes were "poppy" but not as bad as their present condition. She does not recall what her B.M.R. was prior to operation. Thyroidectomy was performed on February 3, 1947. Fifteen days following both eyes became affected and began to burn and smart; this was associated with excessive tearing. These symptoms persisted, although somewhat relieved by wearing dark glasses. In June, 1947, she began to have diplopia and blurring of vision. At this time her doctor told her that her eyes were becoming more prominent and gave her thyroid, but there was little improvement. In September, 1947, she again developed generalized urticaria and was treated with Antistine, Pyribenzamine, Hapamine injections, adrenalin, ephedrin, phenobarb, and elimination diet. She was referred to the Winnipeg General Hospital because of her persistent urticaria and the progressive exophthalmos.

At present she complains of blurring of vision in the left eye and diplopia. Her urticaria is very disturbing but attacks seem to be decreasing in severity.

### Physical Examination

A young woman of about 40 years with red hair; very prominent eyes. Height 5 feet, 5 inches. Weight 139¾ pounds. Temperature 98.2. Pulse 86. Respirations 20.

**Head and Neck**

Hair: Normal hairline. Hair is rather coarse. There is no beard. Eyebrows are normal.

Eyelids: Show slight puffiness.

Ears and Lips: Negative.

Tongue: No abnormal tremor. Mucosa tends to be smooth.

Eyes: Ohman's exophthalmos. React to light and accommodation. Lid-lag can be demonstrated. Dalrymple's sign is present. Moebius' sign is present. Right eye is more exophthalmic than left. Ophthalmoplegia of superior right rectus. Fundi—no changes.

Thyroid: No palpable enlargement. Thyroidectomy scar present. No pressure effects on cervical veins nor trachea.

**Thorax**

Lungs: Clear to percussion and auscultation.

Heart: No clinical enlargement. No murmurs. Blood pressure 130/80 (sitting). Rate regular 100/min.

**Abdomen**

Lower abdominal mid-line scar. Lower abdominal right rectus scar. Pubic hair normal distribution. Liver and spleen not palpable. No masses palpated. No tenderness.

**Genitalia**

Normal.

**Extremities**

Negative. Appears to have excessive perspiration of palms both hands.

**Neurological**

(See eye changes). Otherwise normal.

### Laboratory Investigation

1. Repeat B.M.R's—plus 31%, plus 33%, plus 24%.

2. Protein Bound Iodine—15 gamma per 100 cc. (Normal for this district 4.5-9.5).

3. Fasting Blood Cholesterol—228 mgms.

4. Total Proteins—4.6%. (Normal A/G ratio).

5. 17-keto steroid estimation—5.5 mgms. per 24-hour urine. (Lower limit of normal).

6. Blood Cellular Thiamine—79.2 gamma per cent. (Normal 5-15 gamma per cent).

7. Electrocardiogram—Inverted T waves in leads CF 2.

8. X-ray of Chest—Lung fields clear. Heart normal size. No deviation of trachea.

**Dr. Elvin:** This patient presents the typical appearance of malignant exophthalmos, including Dalrymple's and von Grafe's signs. Exophthalmos in these patients may be apparent due to lid retraction (Dalrymple's sign) or true exophthalmos due to (1) increased bulk of extra occular muscles and (2) increase in bulk of fluid and fat in the orbit due to impaired lymph drainage. This impairment of lymph drainage also produces a cheimosis.

The preservation of site is of paramount importance. Ulceration of the cornea due to its protuberance may be prevented by (1) frequent application of some oily liquid, e.g. liquid petrolatum, (2) plastic operations on the eyelids to reduce the size of the palpebral fissure, and (3) operations on bony walls of the orbit, e.g. Naffzigger operation.

**Dr. Bell:** Thyroidectomy in the presence of exophthalmos usually causes it to be aggravated, and when this occurs the most satisfactory medical treatment is a combination of thyroid extract and thiouracil. Incipient exophthalmos should be suspected in any patient who presents eye muscle weakness associated with goitre.

## Trail's Sign in Chest Examination

**Dr. A. B. Houston**

Trail's sign is described as a prominence of the sternomastoid muscle occurring in certain diseases of the chest, associated with tracheal shift, the muscle being more prominent on the side to which the shift occurs. It may be noted by observation and palpation with the head in mid-line. The mechanism of its production is unknown: differential tensions exerted through pre-tracheal fascia to the investing layer of fascia have been postulated; also the possibility of reflex increase in tonus of one or other sternomastoid muscle has been noted. This sign is occasionally present when no X-ray evidence of tracheal shift is present and likewise it may be absent in the presence of obvious tracheal shift, so that at best it must be considered only as an occasionally useful confirmatory sign.

## A Case of Cardiac Cirrhosis

**Presented by Dr. R. A. Polson**

**Discussed by Dr. J. W. Macleod**

Mrs. A. H., age 64, English.

This patient had always been active and in good health until 1937; the only abnormality previous to this was the fact that she had always eaten a diet very deficient in protein and the B-complex. In 1937 she developed symptoms of mild thyrotoxicosis; a thyroidectomy was done for a diffuse, toxic goitre. She was again well until 1940, when symptoms of thyrotoxicosis again appeared. Thyroidectomy was repeated, with relief of symptoms. Following this she remained well until June, 1944. At that time she suddenly developed severe shortness of breath and palpitation. This persisted for 2-3 hours, until a doctor was called who administered nitroglycerine, which caused immediate cessation of the palpitation and alleviation of the dyspnoea. From June, 1944, till June, 1946, the patient continually had some dyspnoea, and during this time her legs swelled intermittently, apparently depending upon activity. Her abdomen also became distended during this time and her appetite diminished. On admission to the hospital in May, 1946, she was markedly dyspnoeic and neck veins were distended. There were creps heard in both lungs, and signs of much fluid were present in the right chest. Her heart was enlarged, the rate was fast, and the rhythm was fibrillation. Blood pressure was 170/100. The abdomen was grossly distended, and marked pitting oedema was present in the legs.

In hospital, paracenteses of the abdomen and thorax were done, with much relief. On digitalis and diuretics and cardiac diet, the patient lost much of her oedema and felt well. Rapid re-accumulation of fluid in thorax necessitated almost weekly thoracenteses. It was not necessary to repeat the abdominal paracentesis. Investigation showed moderate hypochromic anaemia, auricular fibrillation with some myocardial damage, and intermittent albuminuria. The plasma proteins revealed reduction of albumin and increased globulin fraction. In July, 1946, the liver and the tip of the spleen became palpable; this may have been because of the diminution of ascitic fluid. A cephalin flocculation was 3 plus, definitely abnormal. It was felt at this time that she likely had cirrhosis of the liver (cardiac cirrhosis?) and she was put on an intensive vitamin and protein diet. Her plasma protein values returned toward normal on this regime, as well as cardiac treatment. The rate of re-accumulation of the pleural fluid became less and oedema diminished. She was discharged in December, 1946, to continue treatment at home. In January, 1947, all her symptoms and signs recurred and she was again admitted. She improved rapidly on previous regime and thoracentesis and was discharged after three weeks.

In March, 1947, she again had to be admitted because of severity of symptoms, and again responded well to treatment. She was discharged in April, 1947, and remained fairly well until August, 1947. At that time her previous symptoms were again severe and she had an acute episode of diarrhoea. At that time her spleen was palpable, as before, but her liver was barely palpable and was considered smaller than before. Plasma proteins again showed a diminution, especially of the albumin fraction, and a cephalin flocculation was 2 plus. Bromsulphthalein test showed no retention at 30 minutes (normal). She was put on full treatment—dietary and cardiac regime. Since that time she has symptomatically improved, her proteins are approaching normal values, there has been no marked re-accumulation of fluid in her thorax, and her congestive heart failure is considered well controlled.

Further liver function studies, however, reveal functional impairment. Her cephalin flocculation is now normal, but she retains the bromsulphthalein after 45 minutes and her intravenous hippuric acid test reveals excretion considered only 33% of normal. Venous pressure in the leg is markedly raised, being 360 mm. of $H_2O$ above bed level, and

in spite of this her liver is not palpable. It is considered therefore that she has cirrhosis, the etiology of which is at least in part the prolonged congestion over a period of three years. The repeated improvement in her serum albumin, however, demonstrates the importance of a careful nutritional program in cardiac patients, an aspect of treatment that may easily be overlooked. Certainly the prolonged hypoproteinemia may be a factor both in the production of liver injury as well as playing a role in the severity of the oedema.

The etiology of the heart disease in this patient is still a matter of conjecture. The B.M.R. is valueless in a dyspnoeic patient. Protein-bound iodine values in this woman are upper normal, so one may presume that the thyroid may have played in the past but is not active at present.

**Dr. Macleod:** This case is presented for diagnosis. I am not satisfied that the cirrhosis is of cardiac origin and there is much room for conjecture regarding its etiology.

## St. Boniface Hospital

**Reported by F. G. Stuart, M.D.**

## Diagnostic Conference

Case study of Mrs. A. J. B., No. 47-15,332. S.B.H.

Female, age 60. Admitted 12.15 p.m., Dec. 13, 1947.

Entrance Complaint: Pain in right upper abdomen and thorax, 10 hours.

### Past History

1937—Diagnosed disseminated sclerosis. The patient has been bed-ridden for the past 2 years.

1939—Appendectomy.

1947, June—Suffered an illness featured by mild epigastric distress and difficult respiration. Diagnosed pneumonia and recovered on treatment at home.

### Present Illness

On retiring early the evening prior to admission the patient had complained of "not feeling well." Because she had been constipated for 3 days, she took a laxative.

At 2 a.m. she experienced a pain in the right upper abdomen. She felt that she was having a recurrence of her June illness and took a ¼ gr. tablet of morphine which she still had on hand. This did not relieve her as she had expected and a doctor was called.

At 3 a.m. she was found half-sitting up in bed complaining of chilliness and right upper abdominal pain aggravated by respiration. Perspiration was noted on the brow and the face had a greyish tinge. The pulse was normal. Examination of the chest revealed a few rhonchi and diminished breath sounds in the right base. The abdomen was tender to the right of the umbilicus and pain extended up over the lower right chest. There was no rigidity, but there was a suspicion of some distension of the intestines. Morphine was administered and the physician suspected that he was dealing with a recurrence of the June illness.

At 8 a.m. the patient vomited and the pain in the upper abdomen continued unabated.

On Dec. 13, 1947, at 12.15 p.m. she was admitted to St. Boniface Hospital complaining of upper abdominal pain and inability to void. Temperature was 99.4, pulse 120 and respirations at 24 per minute were labored.

The problem was now one of differentiating an intrathoracic from an intra-abdominal lesion. Food was withheld and penicillin therapy instituted.

Investigation began with a flat plate of the abdomen which showed a distended urinary bladder and a moderate accumulation of gas in the stomach and colon. A barium enema was done with difficulty but no organic obstruction of the colon was found.

The W.B. C. was 22,600 with 95% of these being polymorphs. Appendicitis was excluded by her past history. The degree and locality of the tenderness seemed to exclude acute cholecystitis or pancreatitis. It was felt, nevertheless, that an intra-abdominal inflammatory lesion likely associated with irritation of the right diaphragm and pleura had to be kept in mind. A perforating carcinoma of the ascending colon was a suggested possibility. The temperature hardly seemed high enough for a subphrenic abscess.

The patient did not sleep well the first night in hospital. She was given no sedatives.

On Dec. 14th, the second day, her respiration was still labored and she complained of upper abdominal pain when moved. The temperature was 99.4. Dullness was increased in the right base posteriorly. An A.P. film of the chest was made with the patient in a semi-sitting position in bed. This was because paralysis made it impossible for her to stand erect. Peribronchial infiltration was noted in the right base and this was considered evidence of an acute pulmonary inflammation of the broncho-pneumonic type.

On the basis of these findings plus a reluctance to open the abdomen of a paralyzed woman of 60 without clear-cut indications a tentative working diagnosis of right basal pneumonia with referred abdominal pain was made.

Fluids and light solids were now permitted. Shortly after taking tea and jello at 2.30 p.m. emesis followed. Re-examination of the abdomen

later in the evening revealed a downward shifting and an increase in the abdominal tenderness. In view of these changes the tentative diagnosis of pneumonia was no longer tenable and was rejected in favor of an "acute abdomen."

Now, 48 hours after onset of her illness, exploration of the abdomen was considered definitely indicated and she was prepared for laparotomy.

On opening the abdomen clear fluid was encountered. Separation of adhesions led to the discovery of dark fluid in the upper abdomen and finally a perforation in the anterior wall of the duodenal cap. This was repaired and the abdomen closed with drainage. Despite adequate supportive care she died on the 4th post-operative day. A post-mortem was not obtained.

**Discussion**

It was considered that the most unexpected feature of this case was the perforation of the duodenum in a bed-ridden woman of 60 who had no gastric complaints previously.

Although an intra-abdominal condition was suspected at the outset its diagnosis was masked by three features.

First, the patient's history of a previous diagnosis of pneumonia with a somewhat similar onset.

Secondly, the apparent presence of a recurrence of pneumonia with radiological confirmation.

Thirdly, the spread of gastric contents through the abdomen was limited by adhesions.

The feasibility of treating this case non-surgically by suction, intravenous therapy and antibiotics was considered in retrospect. This suggestion was based on the observation that the perforation apparently occurred early in the morning when there was relatively little in the stomach and the limitation of peritoneal contamination by adhesions. She was apparently holding her own while food by mouth was being withheld. It was the aggravation of abdominal symptoms after taking food that resulted in abandoning the original tentative diagnosis of pneumonia in favor of an "acute abdomen."

The association of free air in the abdomen with perforated peptic ulcer was mentioned. When present, it offers confirmation of a diagnosis which should have already been made by one's own "natural resources." If absent, perforation is not excluded. In this case an erect chest film could not be made because of paralysis. A left lateral decubitus film likely would not have shown free gas because leakage through the perforation was limited and not into the peritoneal cavity generally.

## Manhattan and the Polyclinic*

**L. A. Sigurdson, M.D.**

"I never thought New York a happy city—there are too many people crowding and competing on this island rock—and now it seems no better but rather worse, more deeply bewildered and frustrated, more than ever anxious to forget some mysterious loss that cannot be forgotten, more restless even than before, in its nightly pursuit of diminishing pleasures.

All that is wrong with our age, even when at its most prosperous, is shown here in sharp focus. No roots can penetrate this rock. Not a flower can blossom on these concrete cliffs. The lonely heart of man cannot come home there. It is filled with people who, after three quick drinks, begin to dream of somewhere else."

These are the words of Priestley after an absence of ten years from New York City and express so well my impressions after living in the heart of Manhattan for three months that I quote it here. I lived on West 49th St., between Radio City and Broadway, and was thus in the centre of the business and theatre section. The enormous skyscrapers reaching for the clouds and the many dark, fast trains that rushed through the subways, which honeycombed the rock far below, were filled with masses of people, looking worried, harassed and ever in a hurry. The taxi cabs by the thousands, the trucks, the news stands, the blaze of electric lights on Broadway, the garbage cans, the noise, the mink-coated members of the select, the beggars and panhandlers on the streets, the beautiful shops on Fifth Avenue, the dirty little shops on Ninth Avenue, the mansions on Park Avenue, the slums in Hell's Kitchen, the brokers in Wall Street and the bums in the Bowery presented such contrasts that it is no wonder that people come from all over the world to enjoy themselves, to study and to trade. Here one finds the best at its best and the worst at its worst.

In 1881 the New York Polyclinic Medical School and Hospital was organized. This was the first school for post-graduate medical study in the United States.

More than 35 000 physicians from all over the world have studied there. The hospital is located in one of the most congested areas in New York and consequently has a very large out-patient department. Eight floors are devoted entirely to clinics for teaching purposes. It is staffed by members of the faculty of the medical school.

Many courses in all the fields of medicine are given there. Some, like the course for General Practitioners, last a month and others, like the course in Otolaryngology last a year. The number of men in the combined course in Gynecology and Surgery,

*Presented to a Clinical Luncheon, Grace Hospital.

which I took, was limited to sixteen. They came from all over; Miricatani from Honolulu, Reid from Truro, N.S., Marchany from Porto Rico, Hawk from Texas, Bodine from Oregon. Hiram Patterson Hawk, an enormous man, 6¼ feet tall and weighing 250 pounds, felt that Texas was the most valued "foreign possession" belonging to the United States. New York was his oyster and he spent large sums exploring the town. Charles Bodine, the quiet unassuming son of a famous surgeon, represented the finest type of medical man. "I wish to add something to each man's life."

On the shoulders of the teachers rests the reputation of the school. A few brief sketches may serve to bring into focus their special interests and personalities.

### Gastro-Intestinal Tract

Dr. Kellogg, a man with a great deal of experience behind him was in charge of organizing the post-graduate course. He has made gastro-intestinal surgery his specialty and is one of the foremost authorities on the duodenum and its anomalies. He favours total resection for peptic ulcers in preference to vagotomy.

Dr. Brennan, Professor of Surgery, had a very pleasing manner and was liked and admired by both staff and students. Gastro-enterology was his special field. He was very fond of illuminating his talks with aphorisms, quotations and witty sayings. When he first started practice in New York he worked in a hospital which he referred to as a "medicated boarding house," "a surgeon must have the eye of an eagle, the heart of a lion and the hand of a lady and not the claws of a lion and the heart of a sheep." "It is so much easier to be critical than correct."

Dr. Weiss, a gastro-enterologist, has simplified laboratory procedures so as to save time and effort in diagnosis.

Dr. Eiss, a very earnest teacher, laid great stress on the visualization of the vessels in gall bladder surgery in order to avoid disaster when anomalies are encountered.

### Diseases of the Breast

One of the most outstanding teachers was Dr. Chase, who has made a special study of carcinoma of the breast and has devised a new technique in the surgery of these cases. On finding that he was able to recover cancer cells from gloves, instruments and solutions, he felt that it was important to use an antiseptic technique to prevent local recurrences and post-operative metastases. During one of his illustrated lectures, which he delivered without the use of notes, he had his senior house surgeon operate on a case of breast tumor. Twenty-eight lymph nodes were removed at this operation, five of which were subsequently found to be involved.

His procedure was to remove the tumor and have a rapid section examination and if malignant all members of the operation staff changed gowns and gloves, the patient was re-draped, a new set of instruments used and the solutions in the wash basins changed. Hot packs soaked in a solution of zephirin were placed on the exposed part of the wound.

### Vascular System

#### Arteries

Dr. Schnayerson, an excellent surgeon, made the arterial tree his special study. He has collected a large series of arteriograms of his own cases which he used in diagnosis. He extended to me the courtesy of allowing me to have made a few copies of some of these. Arteriograms are of value in diagnosing tumors of the kidneys, adrenals and other abdominal organs; pancreatic cysts, hydonephrosis, splenomegalia and peripheral vascular disease. Some of the indications in peripheral arteriography were visualization of aneurysmal sacs, bone malignancy, extent of collateral circulation, extent of arterial injury, and site of arterial embolism. He did paravertebral nerve blocks for diagnosis and treatment of a variety of conditions and numerous operations involving interruptions of the sympathetic pathways. He did ganglionectomies for hypertension, thrombo-angiitis obliterans, Raynaud's disease and angina pectoris. Periarterial stripping was done to improve the collateral circulation in diabetic gangrene of the toes to permit a lower amputation. He is at present analyzing his hypertensive cases.

#### Veins

Dr. Cooper specialized in varicose veins and varicose ulcers and has tried out various sclerosing agents in thousands of cases and is at the present time using "sodium tetradecyl sulphate" solution. The treatment that he used for varicose ulcers which gave excellent results was the use of Daxalan paste. Then a Dome-paste bandage made into a "flesh colored Unna's boot" was applied. Some of the directions to his patients are well worth studying. These concern the care of the feet, cautions regarding corns and callouses, toe nails, garters, exercise, heat, rest, diet and tobacco.

#### The Hand

Dr. Hammett, the sturdily built, very efficient Canadian surgeon, had a complete mastery of the anatomy of the hand and had some excellent and sound ideas on incisions and drainage in infections.

Dr. Barsky, the self-effacing but very competent plastic surgeon, showed some cases of con-

genital defects of the hand which he reconstructed to an amazing degree.

### Gynecology

Dr. Barrows, an outstanding gynecologist, was in charge of this part of the course. A large out-patient clinic was held at the hospital every afternoon and the patients were available for examination and study.

Dr. Adler, the slightly belligerent, aggressive and forceful teacher, gave up a great deal of his time. He devoted twelve whole evenings for demonstrations and discussions on Gynecology in office practice and operative procedures.

Dr. Hennessey was using a fairly new procedure for sterility. This consisted of boring a hole into the uterus and implanting the cut ends of the uterine tubes.

Dr. Lardaro, discussed the problem of artificial insemination. A very careful study of the patient and husband is essential. Both have to sign papers. Two donors are used so that the identity of the father cannot be determined. Since there are many medico-legal problems involved, he feels that it is a missionary type of work.

Dr. Lahn had some excellent results in cases of frigidity. He indicated particularly the use of hormones in therapy. Through the courtesy of Dr. Lahn I was able to see the work that was being done at one of the Cancer Prevention Clinics. Well people are able to have a routine examination for the sum of $10.00. A special gynecological examination was given which included the taking of vaginal and cervical smears which were stained according to the method of Papinicoleau. A full report was furnished to the patient's physician and any suspicious lesions reported with suggestions that biopsies be taken. As evidence of the popularity of this type of medical service it might be stated that appointments are now being made five months in advance.

### Orthopedics

Dr. Bosworth, an outstanding Orthopedic surgeon, presented a large number of cases and hundreds of x-ray plates dealing with fractures in various parts of the body. Many of the cases were of the difficult type requiring plates and screws. He diagnosed disc cases on clinical evidence and has discontinued the use of the Myelogram pre-operatively.

Dr. Nicola discussed various procedures in bone surgery which he himself devised, such as his treatment for recurrent dislocation of the shoulder and fractures of the collar bone.

### Conclusion

One of the best features in a course of this kind is the fact that specially qualified members of the staff took an infinite amount of pain and care in the preparation of their lectures, discussions and clinics. They were ever ready to discuss problems and assist in every way possible. A very significant fact was that these men were of such a stature that they were able to discuss their mistakes very frankly, so that others might learn from them. Courage of the highest order is required for this. It reminded me of the poem called the "Bridgebuilder" of the old man who, having crossed "the chasm deep and wide," stopped and built a bridge and said to a fellow pilgrim:

"There follows after me today,
A youth whose feet must pass this way,
This chasm that has been naught to me,
To that fair-haired youth may a pitfall be,
He too must cross in the twilight dim,
Good friend, I am building a bridge for him."

# EDITORIAL

J. C. Hossack, M.D., C.M. (Man.), Editor

## General Practitioners Organize

The general practitioners of the Province are in the process of forming themselves into a group or section. Their purpose, as I understand it, is to defend their interests where ever these may be attacked, and to ensure the proper consideration of their views and problems. For a long time they have seen the important offices in Societies, Associations and Committees held by specialists who, by the very nature of their work have no personal experience with the problems of general practice. They have no fault to find with such officers as individuals but they feel that in them they have no understanding spokesmen. And so they have come to the conclusion that only by being organized themselves can they hope to have their voice heard and their wishes heeded.

To be sure the general practitioners have for a long time held in their own hands the means of over coming their disadvantages. Even in this day of specialism the general practitioners still out number the specialists. But it is notorious how poorly they attend the business meetings of the Association. Forty doctors or less lay down the policies which will govern 700 or more who, at the time of meeting were otherwise engaged. Certainly there has been lack of general interest and not unlikely there has been also the absence of leadership and of a plan. The new group will be effective, if at all, only by changing not the strength but the attitude of the practitioners.

This it is very likely to accomplish. Association in a group makes each member conscious of the groups and of his fellows. It arouses greater interest in the discussion of problems, for there is always present the possibility and likelihood of their satisfactory solution. Decisions can be reached and plans laid before they are submitted to a meeting of the Association and thus annual business meetings are likely to be attended by larger numbers alive with greater interest. Discussions will thus be more purposeful and satisfaction is likely to be greater as a large part of the profession finds its wishes considered and its voice not disregarded.

I am not clear upon the details but I gather that the plan is to form a General Practice Section of the Association. It is easy to see how naturally this would lead to a Special Practice Section, each threshing out its own difficulties and each proportionally represented in matters which are common to both. An active General Practice Section would be of great advantage to the general practitioners but of equally great advantage to the profession as a whole and the Association as such. Perhaps those who now frown a little as they pay their dues might feel that the added benefits well justified the higher fee. Certainly only within the frame work of the Association could the new section function at its best, and being the larger part of the Association its influence upon the latter would be great. In the next issue I hope to lay before you the actual plan in all its details by the secretary of the section who, I understand, has yet to be elected.

# *Allenburys*

# HYPERDURIC

## INJECTION SOLUTIONS


# FOR PROLONGED ACTION

The *Hyperduric* series of injection solutions were recently introduced by The Allen and Hanburys Company Limited. This series is the result of a search for effective methods of prolonging the pharmacological effect of morphine and other bases. Clinical trials have demonstrated that for a given dose of morphine the period of narcosis can be considerably extended if the base is administered in the form of *mucate* instead of the usual salts such as tartrate or sulphate. This prolongation of effect is also obtained with the mucic acid compounds of other active bases such as epinephrine.

*Hyperduric* M.H.E.
Morphine, gr. ¼, hyoscine, gr. 1/80, epinephrine, gr. 1/160, (as mucates) per c.c. Produces amnesia and narcosis for about 8 hours, without fall of blood-pressure.

*Hyperduric* EPINEPHRINE
1 in 1000 (as mucate). Gives relief for 8 to 10 hours in bronchial asthma.

*Hyperduric* MORPHINE
Morphine, gr ½ (as mucate) per c.c. Relieves pain for 8 to 12 hours.

Boxes of 12 ampoules of 1.1 c.c.

**THE ALLEN AND HANBURYS COMPANY LIMITED**

# CURRENT NOTES & NEWS

Reported by M. T. Macfarland, M.D.

One year ago, a Memorandum regarding returns of members of the medical profession, concurred in by the Canadian Medical Association and the Commissioner for Income Tax in 1943, was reprinted in full.

The negotiations of the Canadian Medical Association and the Minister of National Revenue towards obtaining deduction of expenses involved in attendance at Post-Graduate Courses and scientific meetings, exemptions for salaried physicians, the raising of the ceiling on depreciations for motor cars, and the increased mileage allowance for the operation of a motor car for medical practice, were outlined in the September, 1947, issue of the Canadian Medical Association Journal (page 191).

It was anticipated that when the various proposals had been disposed of by the Department, a new Memorandum would have been issued jointly by the Commissioner of Income Tax and the Canadian Medical Association, giving a complete summary of income tax information as applicable to medical practitioners. To date the negotiations have been inconclusive, and no new Memorandum has yet been received. The 1943 memorandum is reproduced herewith, with the known alterations in black type.

## Dominion Income Tax Returns by Members of the Medical Profession

As a matter of guidance to the medical profession and to bring about a greater uniformity in the data to be furnished to the Income Tax Division of the Department of National Revenue in the annual Income Tax Returns to be filed, the following matters are set out:

### Income

1. There should be maintained by the doctor an accurate record of income received, both as fees from his profession and by way of investment income. The record should be clear and capable of being readily checked against the return filed. It may be maintained on cards or in books kept for the purpose.

### Expenses

2. Under the heading of expenses the following accounts should be maintained and records kept available for checking purposes in support of charges made:

(a) Medical, surgical and like supplies;

(b) Office help, nurse, maid and bookkeeper; laundry and malpractice insurance premiums. (It is to be noted that the Income War Tax Act does not allow as a deduction a salary paid by a husband to a wife or vice versa. Such amount, if paid, is to be added back to the income);

(c) Telephone expenses;

(d) Assistants' fees;

The names and addresses of the assistants to whom fees are paid should be furnished. This information is to be given each year on Income Tax form known as Form T.4, obtainable from the Inspector of Income Tax.

(e) Rentals paid;

The name and address of the owner (preferably) or agent of the rented premises should be furnished (See (j) );

(f) Postage and stationery;

(g) Depreciation on medical equipment;

The following rates will be allowed provided the total depreciation already charged off has not already extinguished the asset value:

Instuments — Instruments costing $50 or under may be taken as an expense and charged off in the year of purchase.

Instruments costing over $50 are not to be charged off as an expense in the year of purchase but are to be capitalized and charged off rateably over the estimated life of the instrument at depreciation rates of 15 per cent to 25 per cent, as may be determined between the practitioner and the Division according to the character of the instrument, but whatever rate is determined upon will be consistently adhered to;

Office furniture and fixtures—10 per cent per annum.

Library—The cost of new books will be allowed as a charge.

(h) Depreciation on motor cars on cost:

Twenty per cent 1st year;
Twenty per cent 2nd year;
Twenty per cent 3rd year;
Twenty per cent 4th year;
Twenty per cent 5th year.

The allowance is restricted to the car used in professional practice and does not apply to cars for personal use.

For **1947** and subsequent years the maximum cost of motor car on which depreciation will be allowed is **$2,500.**

(i) Automobile expense; (one car)

This account will include cost of license, oil, gasoline, grease, insurance, washing, garage charges and repairs;

Alternative to (h) and (i) for **1947** and subsequent years—

In lieu of all the foregoing expenses, including depreciation, there may be allowed a charge of 7c a mile for mileage covered in the performance of professional duties. Where the car is not used solely for the purpose of earning income the maximum mileage which will be admitted as pertaining to the earning of income will be 75 per cent of the total mileage for the year under consideration.

For 1940 and subsequent years where a chauffeur is employed, partly for business purposes and partly for private purposes, only such proportion of the remuneration of the chauffeur shall be allowed as pertains to the earning of income.

(j) Proportional expenses of doctors practising from their residence—

(a) owned by the doctor:

Where a doctor practises from a house which he owns and as well resides in, a proportionate allowance of house expenses will be given for the study, laboratory, office and waiting room space, on the basis that this space bears to the total space of the residence. The charges cover taxes, light, heat, insurance, repairs, depreciation and interest on mortgage (name and address of mortgagee to be stated):

(b) rented by the doctor.

The rent only will be apportioned inasmuch as the owner of the premises takes care of all other expenses.

The above allowances will not exceed one-third of the total house expenses or rental unless it can be shown that a greater allowance should be made for professional purposes.

(k) Sundry expenses (not otherwise classified)—The expenses charged to this account should be capable of analysis and supported by records.

Claims for donations paid to charitable organizations will be allowed up to 10 per cent of the net income upon submission of receipts to the Inspector of Income Tax. This is provided for in the Act.

The annual dues paid to governing bodies under which authority to practice is issued and membership association fees (. . . .) to be recorded on the return, will be admitted as a charge. The cost of attending post-graduate courses or medical conventions will not be allowed.

(l) Carrying charges;

The charges for interest paid on money borrowed against securities pledged as collateral security may only be charged against the income from investments and not against professional income.

(m) Business tax will be allowed as an expense, but Dominion, Provincial or Municipal income tax will not be allowed.

**Professional Men Under Salary Contract**

3. It has been held by the Courts that a salary is "net" for Income Tax purposes. The salary of a Doctor is therefore taxable in full without allowance for automobile expenses, annual medical dues* and other like expenses. If the contract with his employer provides that such expenses are payable by the employer, they will be allowed as an expense to the employer in addition to the salary paid to the assistant.

February, 1943.

**It has been established by court ruling that persons whose income is derived by salary may claim as deduction for income tax purposes, fees paid for the licensing or governing body necessary to maintain them in good standing for purposes of their employment. Whether this ruling applies to salaried doctors who participate in the Manitoba Medical Service has not yet been decided.*

The practice of making quarterly installment payments on income tax may be new to certain of our members, and the rule in this connection is as follows:

Individuals whose income—(a) is derived from carrying on a business or profession (other than farming); (b) is derived from investments; or (c) is more than 25% derived from sources other than salary or wages, are required to pay their estimated tax by quarterly installments during such year. Each payment must be sent in with Installment Remittance Form T.7-B Individuals. Any balance of tax is payable with interest with the T-1 General return which is due to be filed on or before April 30 of the succeeding year.

The following timetable indicates the returns required during 1948:

A. Doctors NOT receiving salaries amounting to ¾ of income.

| Date Due | Forms to be Used |
|---|---|
| March 31, 1948 | T.7-B Individuals, 1948 |
| April 30, 1948 | T-General, 1947 (Note: Doctors should not use T.1 Special regardless of income). |
| June 30, 1948 | T.7-B Individuals, 1948 |
| Sept. 30, 1948 | T.7-B Individuals, 1948 |
| Dec. 31, 1948 | T.7-B Individuals, 1948 |

B. Doctors receiving salaries amounting to ¾ or more of income:

| Date Due | Forms to be Used |
|---|---|
| April 30, 1948 | T.1-General, 1947 |
| Whenever Status is changed (With respect to new employer, marital status, dependents). | T.D-1 |

Doctors who pay salaries to their own employees should send in Form T.-4 by the end of February each year.

### Association Fees — 1948

The fee for joint membership in the Manitoba Medical Association and the Canadian Medical Association is $35.00, which includes both journals.

The fee for the first three years after graduation (not the first three years of practice) is $15.00. Where the individual pays his own fee, but cannot deduct it for income tax purposes because he is on salary, the amount is $15.00.

Where the employer pays the fee, it can be deducted by the employer for income tax purposes and the amount will be $35.00.

In cases where both husband and wife are in practice, the double fee is reduced by $7.00, and they will receive only one copy of each journal.

If there are any further points about which information is required, kindly communicate with the Association Office.

### Recent Registrants With the College of Physicians and Surgeons of Manitoba

Alcock, J. W. A., 955 McMillan Ave., Winnipeg.
Boyd, D. C., Edinburgh, Scotland.
Charatan, F. B., London, England.
Cheng, G. P., Los Angeles, California.
Cosgrove, J. B. R., 538 Campbell St., Winnipeg.
Crawford, W. McCulloch, Selkirk, Manitoba.
Fowler, M. W., Lower Lake, California.
*Gee, E. M., 320 Sherbrook St., Winnipeg.
*Hall, D. H. M., Joint Air School, Rivers, Manitoba.
*Howarth, J. C., Deer Lodge Hospital, Winnipeg.
Innocent, G. G., Riverside, California.
MacDonald, C. E., Ste. 63, Dalkeith Apts., Wpg.
MacKinnon, A. H., Gladstone, Manitoba.
McFetridge, J. G., 705 Valour Rd., Winnipeg.
Merkeley, N. P., 131 Handsart Blvd., Tuxedo, Man.
Mills, F. H. G., 617 Medical Arts Bldg., Winnipeg.
Phaneuf, I. A., 552 Des Meurons St., St. Boniface.
Scott, R. M., Wallaceburg, Ontario.
Sisler, G. C., Psychopathic Hospital, Winnipeg.
Swartz, M. J., Mall Medical Group, Winnipeg.
Taylor, W. H., Loma Linda, California.
Thomas, E. J., Ste. 63, Dalkeith Apts., Winnipeg.
Walsh, F. M., Brandon, Manitoba.
Yauniskis, A. A., Cardiff, Wales.
*Temporary.

### Amendment to Venereal Disease Regulations

The Department of Health and Public Welfare announce that recently an amendment has been made to the Veneral Disease Regulations under "The Public Health Act,," regarding the lapse from treatment of patients for venereal disease. The period of time has been changed from one month to fourteen days.

A new form has been provided for notification of cases. If any of the old forms remain in your possession it is suggested that they be destroyed.

### To the Pharmacists of Brandon

**From Their Companions in Joy and Despair**
**The Physicians of the Same District**

Welcome! Companions of Hippocrates.
Who with his sons share equal glory
For skill have ye no less than these
To roll a pill or tell a story.

With them ye share an equal fate
When blatant phone insistent calls
To rise and pacify a spate
Of senile groans or infant squalls.

Arise, then, let us give the slip
To patients, Let them go to blazes!
And drain in goodly fellowship
A bumper to each other's praises.

For we are lords of Life and Death
We supervise Life's cavalcade.
Without us few draw first their breath
And few depart without our aid.

For one brief moment then relax.
Forget that Time or Duty presses.
Anon we'll pay our Income Tax
And turn again to Man's distresses.

So then from dawn to day's decline
With mutual skill and good intent
Will we pursue our one design
To further human betterment.

And when we meet, come soon, come late
The fate all mortals have to face.
May we convene at Heaven's gate
Or failing that—some other place.

Sidney J. S. Peirce, M.D.,
Brandon.

# SOCIAL NEWS

Reported by K. Borthwick-Leslie, M.D.

What a boner! Perhaps to make the publicity worth while, I should announce that said Chiropodist has returned from his P.G. course? So sorry please.

♦

It's a good thing that Dr. W. Grant of the Children's Hospital, is photogenic, what with pictures receiving cheques from the Kinsmen, speaking to the Kinettes and receiving ultra super gas machines. Dan Revell doesn't do badly either, does he? By the way, Dan, what is this power? I coaxed for nigh onto 10 years for a new machine.

♦

Welcome to Canada, Manitoba and Selkirk, to Dr. and Mrs. W. McCulloch Crawford, graduate of Glasgow University, Psychiatrist from the Royal Naval Hospital at Mernskirk, near Glasgow. He has recently taken over new duties on the staff at Selkirk Mental Hospital.

♦

Dr. and Mrs. Maurice Berger are also happy to announce the arrival of a daughter on the 23rd of January, 1948.

To break the run of girls, Dr. and Mrs. S. O. Dowling announce the arrival of Charles Frank Michael, Jan. 12th, 1948.

♦

This is slightly out of our field but Marnie has so many friends in the Profession that I think we should wish her happiness and health in her new home. Ex. N.S. Martha Hearn, veteran of both great wars, left early in the month to join her father in Victoria, B.C. She will be missed in Winnipeg, but happy future in Victoria, Marnie.

♦

I am glad to see that Dr. C. W. Wiebe, Winkler, Man., has obtained recognition of his well known work, supporting the advance of education and public health. He has been elected Vice-President of the Education Association, and is to be congratulated on his support of better conditions for our rural school teachers.

♦

Dr. and Mrs. Patrick Adamson left a short while ago for Edmonton, whence they will fly to Port Radium, N.W.T., where they will reside.

Having read Dr. Walter Strangway's theory of the etiology of Peptic Ulcer, in Congo, Portugese West Africa, i.e. witch sorcery, etc., I can't help but wonder what Boogie, Woogie, and Bongo, Bongo, our friend Dr. J. C. Hossack has been indulging in. And we always thought him to be such a quiet, sedate chap!

After about Wednesday, the 28th, you will be able to forward your news items to your lady Dr. Winchell to her new office, 311 Medical Arts. Telephone the same number.

♦

It is unnecessary for me to say anything personally, but on behalf of the profession, may I extend our sincere sympathy to Mrs. Blondal, family. patients and innumerable friends on the loss of that grand man, Dr. A. Blondal.

♦

We also extend our sympathy to Dr. Jean Bourgoin, his mother and the rest of the family on the death of Mr. J. H. Bourgoin, husband and father.

♦

Congratulations to Dr. and Mrs. P. K. Tisdale on the birth of a daughter, Jan. 9th, 1948.

♦

Dr. Kenneth Edwards, son of Mr. and Mrs. J. Edwards, Transcona, is on his way to England for post-graduate study at the Royal College of Surgeons. Good luck!

The engagement also is announced of Margaret Phyllis, only daughter of Dr. and Mrs. D. N. MacCharles, Medicine Hat, Alberta, to Clement D., son of the late C. Picciotto, K.C., and Mrs. Picciotto, London, England.

♦

Dr. P. H. T. Thorlakson has returned recently from a three weeks' trip to the West Coast. In Victoria, British Columbia, he was the "Founders' Lecturer" at the annual meeting of the North Pacific Surgical Association and delivered papers on the following subjects: "The Prevention and Repair of Common Duct Strictures"; "Surgical Problems of Intractable Chronic Ulcerative Colitis," and "Observations on the Surgical Management of Chronic Duodenal Ulcer with Special Reference to the Role of Vagotomy." While en route to Colorado Springs, where he attended the annual meeting of the Western Surgical Association, Dr. Thorlakson visited Seattle, Portland and San Francisco. He was present at Surgical Conferences in these cities and contributed to the programmes.

# Manitoba Medical Service

As from the 1st of January, 1948, enrollment for the "B" Plan has been resumed. However, many new regulations, exclusions, etc., have been introduced, in the hope of solving problems which have caused much discontent in the past three years. A fault of the original folders supplied to subscribers and doctors was that it was never stated definitely what privileges were available to the subscriber, and what the exclusions were. When payment was refused for services, the disgruntled subscriber came to argue it with us. Two expressions were common, "I never read the folder," and "My doctor told me that it would be covered."

At the moment of writing, there are still many questions which have not been settled, and we are still a long way from standardization. Seeing that it was the doctors, and doctors alone, who set up this Plan, it is their responsibility to study and solve the problems which cause so much irritation to the subscribers.

In spite of this, the demand for enrollment is very great, and it may take several months to satisfy it. There are now two members of the staff whose whole time is devoted to interviewing and enrolling groups, some of which run into several hundreds. The registration and instruction of these involves much clerical work.

You will see by the folder that the treatment of many conditions requires a waiting period. It has been quite common in the past to receive a request for two to four tonsillectomies for the dependents of a subscriber who joined two months before. If accepted, from one to three years' subscriptions will be required to cover these, and the subscriber may cancel out before that period elapses; also there will be other illnesses and perhaps a major operation during that period.

If you will understand that this service is designed to supply the treatment which a subscriber would ordinarily provide for himself and his dependents, without the financial embarrassment associated with serious illnesses or major operations, you will appreciate that if he runs to the doctor or calls him for trivial ailments, no monthly dues which he could afford would ever meet such a situation.

There is a matter in which we would like your co-operation. Patients from time to time make unnecessary demands, calling you late in the evening or at night for conditions which were not emergent, and for which there could be no cause for anxiety. With the co-operation of a few doctors in such cases, we have passed the account for an office call, and notified the patient that he or she is liable for the balance.

In other cases they demand numerous house visits or office calls for minor ailments. If you will report such instances to us, it will be of assistance. You need not be afraid of their changing over to a more complacent doctor, because we require very good reasons for giving authority for such a change, and if done without authority, refuse to pass the bill.

The following motion was recently passed by the Board:

"That the Medical Director be empowered to request X-ray films, BMR and EKG tracings when necessary. That all medical members be notified by notice in the Manitoba Medical Review, also circular letter of the ruling, and to keep such tracings."

One problem which is as yet unsolved, may bring some suggestions from readers of this article. It has been before the medical members of the Board, and was shelved, but as it is a pressing matter, it must be introduced; it is the continued treatment of chronic, often incurable conditions month after month for periods frequently extending over a year. In many cases, the treatment is by injections given at the office, sometimes fifteen in a month. The Referee Board has subjected the accounts to severe revision, but that is not the solution. The commonest types of cases are menopause, rheumatoid arthritis, hypothyroidism, anaemia, either primary or secondary, debility treated with vitamin injections, disseminated sclerosis, prostatis. In a portion of one month, the accounts placed before the Referee Board amounted to more than a thousand dollars.

Mr. Frank Smith, who is the Director of American Medical Care Plans, visited us in November. This is an organization for co-operation, and co-ordination of the fifty-seven Medical Care Plans at present operating in the States; in other words, he assists in the pooling of knowledge gained by practical experience, and gives advice when asked. We have been an associate member for more than a year, the subscription for that class is a very small one, and his visit and investigation here cost us nothing. He spent most of two days at this office.

He was entertained at an informal dinner by your Board, and in the subsequent discussion, no punches were pulled and no holds barred. The very small attendance at the meeting which the Winnipeg Medical Society threw open to him was a great disappointment to us. If, as I am given to understand, many of you criticize the operation of this Plan, which after all collects half a million dollars a year for you, surely this was your opportunity to voice your criticisms, or learn the prob-

lems involved. I admire him for the fact that he had the answer to every question put to him, and never hedged.

He has kindly consented to give you a resume of his findings, which may appear in this issue. Some of the highlights expressed during his visit were as follows.

No plan in the United States has as high a fee scale as Manitoba. He does not think we will ever be able to pay more than 65% under our present methods. No plan has a higher percentage when service is rendered by a specialist; the fee is fixed for the service regardless of who provides it. All plans allow extra charges to patients where the fee is below the practitioner's regular scale, and the subscriber earns above a certain salary. Our administration costs recently have been about 11%; he said that we need not apologize for that to anyone, or for any cost up to 15%. That no plan in the States would in two or three years have as useful statistical records as we shall. This refers to the method we set up for obtaining analytical data, which was not available formerly.

E. S. MOORHEAD, M.B.

# Department of Health and Public Welfare

## Comparisons Communicable Diseases — Manitoba (Whites and Indians)

| DISEASES | 1947 Nov. 30 to Dec. 27,'47 | 1947 Nov. 2 to Nov. 29,'47 | 1946 Dec. 1 to Dec. 28,'46 | 1946 Nov. 3 to Nov. 30,'46 | TOTALS Dec. 28,'46 to Dec. 27,'47 | TOTALS Dec. 30,'45 to Dec. 28,'46 |
|---|---|---|---|---|---|---|
| Anterior Poliomyelitis | 4 | 25 | 0 | 2 | 599 | 48 |
| Chickenpox | 229 | 163 | 143 | 162 | 1413 | 1455 |
| Diphtheria | 6 | 4 | 15 | 17 | 77 | 198 |
| Diphtheria Carriers | 1 | 2 | 3 | 9 | 19 | 49 |
| Dysentery—Amoebic | 0 | 0 | 0 | 0 | 1 | 1 |
| Dysentery—Bacillary | 0 | 0 | 0 | 0 | 7 | 1 |
| Erysipelas | 3 | 2 | 1 | 2 | 157 | 53 |
| Encephalitis | 0 | 6 | 0 | 0 | 82 | 6 |
| Influenza | 3 | 6 | 9 | 7 | 157 | 219 |
| Measles | 114 | 245 | 310 | 80 | 6949 | 2243 |
| Measles—German | 6 | 1 | 0 | 3 | 39 | 26 |
| Meningococcal Meningitis | 1 | 0 | 3 | 1 | 16 | 23 |
| Mumps | 86 | 127 | 139 | 113 | 1504 | 2349 |
| Ophthalmia Neonatorum | 0 | 0 | 0 | 0 | 1 | 0 |
| Pneumonia—Lobar | 1 | 6 | 24 | 10 | 174 | 194 |
| Puerperal Fever | 0 | 3 | 0 | 0 | 5 | 3 |
| Scarlet Fever | 15 | 49 | 38 | 42 | 227 | 610 |
| Septic Sore Throat | 0 | 0 | 2 | 2 | 13 | 38 |
| Smallpox | 0 | 0 | 0 | 0 | 0 | 0 |
| Tetanus | 0 | 0 | 0 | 0 | 4 | 1 |
| Trachoma | 0 | 0 | 0 | 0 | 2 | 2 |
| Tuberculosis | 98 | 131 | 146 | 90 | 1576 | 1084 |
| Typhoid Fever | 2 | 1 | 0 | 1 | 9 | 20 |
| Typhoid Paratyphoid | 0 | 0 | 0 | 0 | 0 | 3 |
| Typhoid Carriers | 1 | 0 | 0 | 0 | 2 | 3 |
| Undulant Fever | 0 | 0 | 1 | 1 | 7 | 22 |
| Whooping Cough | 85 | 142 | 53 | 49 | 1244 | 426 |
| Gonorrhoea | 99 | 119 | 133 | 153 | 1927 | 2358 |
| Syphilis | 34 | 47 | 35 | 69 | 582 | 686 |
| Diarrhoea and Enteritis, under 1 yr. | 8 | 4 | 18 | 11 | 155 | 255 |

**Four-Week Period November 30th to December 27th, 1947**

| DISEASES (White Cases Only) *Approximate population. | *743,000 Manitoba | *906,000 Saskatchewan | *3,825,000 Ontario | *2,962,000 Minnesota |
|---|---|---|---|---|
| Anterior Poliomyelitis | 4 | 25 | 10 | 6 |
| Chickenpox | 229 | 283 | 1476 | .... |
| Diarrhoea and Enteritis | 8 | — | — | — |
| Diphtheria | 6 | 2 | 31 | 26 |
| Diphtheria Carriers | 1 | .... | .... | 18 |
| Dysentery—Amoebic | .... | .... | 3 | 1 |
| Dysentery—Bacillary | .... | .... | 2 | — |
| Erysipelas | 3 | 2 | 3 | .... |
| Infectious Jaundice | .... | .... | 1 | .... |
| Influenza | 3 | .... | 19 | 1 |
| Leth. Encephalitis | .... | .... | .... | 3 |
| Malaria | — | — | — | 7 |
| Measles | 114 | 60 | 1307 | 1198 |
| Measles, German | 6 | 6 | 48 | .... |
| Mumps | 86 | 315 | 631 | .... |
| Meningococcal Meningitis | 1 | .... | 3 | 3 |
| Pneumonia Lobar | 1 | .... | — | — |
| Puerperal Fever | .... | .... | .... | .... |
| Scarlet Fever | 15 | 15 | 311 | 203 |
| Septic Sore Throat | .... | 1 | 2 | .... |
| Tuberculosis | 98 | 46 | 154 | 249 |
| Typhoid Fever | 2 | .... | 2 | 2 |
| Typhoid Carriers | 1 | .... | .... | — |
| Para-Typhoid Fever | .... | 2 | 1 | .... |
| Undulant Fever | .... | .... | 3 | 21 |
| Whooping Cough | 85 | 23 | 149 | 294 |
| Gonorrhoea | 99 | .... | 328 | .... |
| Syphilis | 34 | .... | 202 | .... |

### DEATHS FROM REPORTABLE DISEASES

**For Four-Week Period December 3rd to December 30th, 1947**

**Urban** — Cancer, 49; Pneumonia Lobar (108, 107, 109), 8; Pneumonia (other forms), 9; Poliomyelitis, 1; Syphilis, 2; Tuberculosis, 8; Whooping Cough, 1; Septicaemia, 1; Diarrhoea and Enteritis (under 2 years), 2. Other deaths under 1 year, 23. Other deaths over 1 year, 175. Stillbirths, 14. Total, 212.

**Rural**—Cancer, 33; Influenza, 2; Lethargic Encephalitis, 2; Pneumonia Lobar (108, 107, 109), 3; Pneumonia (other forms), 14; Syphilis, 2; Tuberculosis, 15; Diarrhoea and Enteritis (under 2 years), 9. Other deaths under 1 year, 19. Other deaths over 1 year, 179. Stillbirths, 7. Total, 205.

**Indians** — Pneumonia (other forms), 9; Tuberculosis, 6. Other deaths under 1 year, 2. Other deaths over 1 year, 6. Stillbirths, 1. Total, 9.

♦

**Poliomyelitis** shows 599 cases reported during the year and of these eight died. Most of the cases have made a complete recovery but a few will require prolonged treatment.

**Diphtheria**—Seventy-seven cases were reported which is the least number in any year in the history of Manitoba. This disease can be wiped out completely if we can get all children and young adults immunized. Now that we are winning we should, if anything, increase our efforts to achieve complete mastery of this infection.

**Encephalitis** finished up the year with 82 cases causing six deaths. Blood reports are not yet available.

**Whooping Cough** has produced more cases in 1947 than in 1946. More immunization is needed and should in time show a definite reduction.

## Medical Library

**Recent Accessions From October, 1946, to October, 1947**

(Continued from Vol. 28, Page 26)

Bourne, A. W. Recent advances in obstetrics and gynaecology; 6th ed.
Churchill, 1946 (c1945). 357 p.

Braum-Menendez, E. Renal hypertension.
C. C. Thomas, 1946. 451 p.

Burkett, L. W. Oral medicine.
Lippincott, c1946. 674 p.

Cameron, A. T. Recent advances in endocrinology; 6th ed.
Churchill, 1947.

Cameron, H. C. The nervous child; 5th ed.
Geoffrey Cumberlege, Oxford Univ. Press, 1946, 252 p.

Clark, W. E. LeGros. The tissues of the body; an introduction to the study of anatomy; 2d ed.
Clarendon Pr., 1945. 383 p.

Conference on diagnosis in sterility. . . . Diagnosis in sterility, proceedings edited by Carl T. Engle.
C. C. Thomas, 1946. 237 p.

Conway, E. J. Micro-diffusion analysis and volumetric error; rev. ed.
Crosby Lockwood, 1947. 357 p.

Craig, W. S. M. Child and adolescent life in health and disease; a study in social paediatrics.
Livingstone, 1946. 667 p.

Criep, L. H. Essentials of allergy.
Lippincott, (c1945). 389 p.

Davidoff, L. M. The normal encephalogram; 2d ed.
Lea and Febiger, 1946. 232 p.

Deutsch, H. The psychology of women; a psychoanalytic interpretation.
Grune and Stratton, 1944-1945. 2 v.

Drinker, C. K. Pulmonary edema and inflammation.
Harvard University Pr., 1947. (c1945). 106 p.

Dubos, R. J. The bacterial cell.
Harvard University Pr., 1946. (c1945). 460 p.

Dunbar, H. F. Emotions and bodily changes; 3d ed.
Columbia University Pr., 1947. 604 p.

Dunlap, F. L. White versus brown flour.
Wallace & Tiernan, 1945. 272 p.

Dyke, S. C. Recent advances in clinical pathology.
Churchill, 1947. 468 p.

Eggleston, C. Essentials of prescription writing; 7th ed., rev.
Saunders. (c1942). 155 p.

Elwyn, H. Diseases of the retina.
Blakiston, c1946. 587 p.

Feinberg, S. M. Allergy in practice; 2d ed.
The Year Book Pub. (c1946). 838 p.

Farrell, J. T. Roentgen diagnosis of diseases of the gastrointestinal tract.
C. C. Thomas, 1946.

Felsen, J. Bacillary dysentery colitis and enteritis.
Saunders, 1945. 618 p.

Fleming, Sir A. Penicillin; its practical application.
Butterworth, 1946. 380 p.

Flexner, S. William Henry Welch and the heroic age of American medicine.
Viking, 1941. 539 p.

Fulton, J. F. Harvey Cushing.
C. C. Thomas, 1946. 754 p.

Gibb, T. R. P. Optical methods of chemical analysis.
McGraw-Hill, 1942. 391 p.

Gray, H. Anatomy, descriptive and applied; 29th ed.
Longmans, 1946. 1597 p.

Graybiel, A. Electrocardiography in practice.
Saunders, 1946. 458 p.

Green, D. E. Currents in biochemical research; thirty-one essays charting the present course of biochemical research, and . . . social problems.
Interscience, 1946. 486 p.

Groedel, F. M. The venous pulse and its graphic recording.
Brooklyn Medical Pr. (c1946). 223 p.

Guthrie, D. A history of medicine.
Nelson, 1945. 448 p.

Haden, R. L. Principles of hematology; 3d. ed., rev.
Lea & Febiger, 1946.

Hamilton, A. Industrial toxicology.
Oxford University Pr. (c1945). 188 p.

Hamilton-Patterson, J. L. Penicillin in general practice; 2d ed., rev. & enl.
Staples, 1947. 110 p.

Handfield-Jones, R. M. Surgery of the hand; 2d ed.
Livingstone, 1946. 164 p.

Harrison, G. A. Chemical methods in clinical medicine, their application and interpretation with techniques of simple tests; 3d ed.
Churchill, 1947. 630 p.

Haymaker, W. Peripheral nerve injuries, principles of diagnosis.
Saunders, 1945. 227 p.

Henry, A. K. Extensile exposure applied to limb surgery.
Livingstone, 1945.

Herndon, R. F. An introduction to essential hypertension.
C. C. Thomas, 1946. 88 p.

Hewer, C. L. Recent advances in anaesthesia and analgesia; 5th ed.
Churchill, 1946. (1944). 343 p.

Hinsie, L. E. The person in the body; an introduction to psychosomatic medicine.
W. W. Norton. (1945). 263 p.

Hodges, F. J. Radiology for medical students.
Year Book Pub., 1947. 424 p.

Holmes, G. M. Introduction to clinical neurology. Livingstone, 1946. 183 p.

Hoskins, R. G. The biology of schizophrenia. W. W. Norton. (c1946). 191 p.

Ivy, R. H. Fracture of the jaws; 3rd ed. Lea & Febiger, 1945. 174 p.

Jackson, C., ed. Diseases of the nose, throat and ear, including bronchoscopy and esophagoscopy. Saunders, 1946. (c1945). 844 p.

Jong, H. H. de. Experimental catatonia, a general reaction-form of the central nervous system. Williams and Wilkins, 1945. 225 p.

Joslin, E. P. The treatment of diabetes mellitus; 8th ed., rev. Lea & Febiger, c1946. 861 p.

Kamen, M. D. Radioactive tracers in biology. Academic Pr., 1946. 281 p.

Kaplan, O. J., ed. Mental disorders in later life. Stanford University Pr., c1945. 436 p.

Katz, L. N. Electrocardiography; 2d ed., rev. Lea & Febiger, 1947. (c1946). 883 p.

Keith, Sir A. Essays on human evolution. Watts, (1946). 224 p.

Kennedy, J. W. Vaginal hysterectomy. Davis, 1944. 505 p.

Key, J. A. The management of fractures, dislocations and sprains; 4th ed. Mosby, 1946. 1322 p.

Leithauser, D. J. Early ambulation and related procedures in surgical management. C. C. Thomas, 1946. 232 p.

Levinson, S. A. Clinical laboratory diagnosis; 3d ed., thoroughly rev. Lea & Febiger, 1946. 971 p.

Lewis, N. D. C., ed. Modern trends in child psychiatry. International Universities Press. (c1945). 341 p.

Lewis, Sir T. Exercises in human physiology. Macmillan, 1946. 103 p.

McCombs, R. P. Internal medicine in general practice; 2d ed. Saunders, 1947. 741 p.

McPheeters, H. O. Injection treatment of varicose veins and hemorrhoids; 3d ed., rev. Davis, 1946. 336 p.

Major, R. H. Classic descriptions of disease; 3d ed. C. C. Thomas, (c1945). 679 p.

Manson, Sir P. Tropical diseases, ed. by P. H. Manson-Bahr; 12th ed. Cassell, 1946. 1068 p.

Markham, S. F. Climate and the energy of nations; rev. and enl. ed. Oxford University Pr., 1944. 236 p.

Massermen, J. H. Principles of dynamic psychiatry, including an integrative approach to abnormal and clinical psychology. Saunders, 1946. 322 p.

Master, A. M. The electrocardiogram and X-ray configuration of the heart; 2d ed. Lea & Febiger, c1942. (1946). 404 p.

Maxwell, J. Introduction to diseases of the chest; 2d ed. Hodder, 1945. 292 p.

Mead, S. V. Oral surgery; 3d ed. Mosby, 1946. 1449 p.

Merritt, H. H. Fundamentals of clinical neurology. Blakiston, c1947. 289 p.

Mitchell, A. G. Textbook of pediatrics, ed. by W. E. Nelson; 4th ed., rev. Saunders, c 1945. (1947). 1352 p.

Moncrieff, R. W. The chemical senses. John Wiley, 1944. (1946). 424 p.

National research council. Committee on surgery. A manual of surgical anatomy, prepared . . . by T. Jones and W. C. Shepard. Saunders, 1945. 195 p. (Its Military surgical manuals, v. 7).

New York Academy of Sciences. Amino acid analysis of proteins, by Wm. H. Stein and others. New York Academy of Sciences, 1946. 180 p. (Its Annals, Vol. 47, art. 2).

(To be Continued)

## Obituary

### Dr. S. W. Arthur

Dr. S. W. Arthur died on January 10, in Portage la Prairie General Hospital. Born in Ontario, seventy-three years ago, he graduated in medicine from Queen's University in 1903, then began practice in Redvers, Sask. For five years he sat in the Saskatchewan legislature as an independent member for Cannington. In 1910 he took a post-graduate course in London. In 1943 he moved from Redvers to Portage la Prairie where he took an active part in the life of the community. Besides his widow, he is survived by a son, Dr. John F. Arthur, of Burnaby, B.C., a daughter and a foster daughter.